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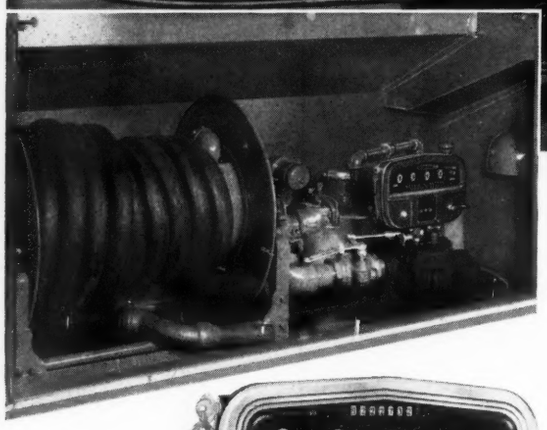
fueloil & oil heat



Photos, courtesy of Standard Oil Company (Indiana)

—PLUS SPACE SAVING COMPACTNESS ON FUEL OIL DELIVERY TRUCKS

Brodie Quantrol Meters equipped with Brodimatic Counters adapt themselves not only to the truck designers' requirements, but to efficiently meeting the exacting service needs of delivery operations. Their compactness in size, together with flexibility of piped-up arrangement contributes toward greater accessibility and better truck appearance. On the other hand their dependability of measurement, coupled with distance-spanning direct readings and fully automatic quantity control makes them indispensable in eliminating errors and resultant losses. Speeding-up deliveries, especially where long hose discharge is required, further adds to handling more gallonages per truck per day at a much lower cost. In designing or converting tank truck equipment to metered units, adopt Brodie Meters for maximum efficiency and service. Write today for full details.

BRODIE METERS

PETROLEUM METERING EXCLUSIVELY

RALPH N. BRODIE CO., INC.
953 61ST STREET, OAKLAND 8, CALIF.

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SINCE 1927

REPRESENTATIVES AND STOCKS IN ALL PRINCIPAL CITIES

VOL. 7, NO. 6

fueloil & oil heat

OCTOBER 1948

Names in the News

Carroll M. Baumgardner has been elected vice president for sales, National Radiator Co., Johnstown, Pa., replacing John C. Barnes, resigned. Mr. Baumgardner recently resigned as executive vice president and director, United States Radiator and president and director, Capital Finance Corp. He is chairman of the executive committee, Institute of Boiler & Radiator Manufacturers and a director, Plumbing and Heating Industries Bureau.

Alfred Greulich is acting as factory representative for Skuttle Mfg. Co., Detroit 7, Mich. In February of this year he became representative for the state of Michigan and later had the city of Toledo, Ohio added to his territory. A native of Michigan, Mr. Greulich worked in the Skuttle plant during summer vacations, and after a wartime enlistment in the Army Air Corps, returned to the plant as a division foreman.

H. G. Swanson, manager of Shell Oil Company's Chicago marketing division, has transferred to the New York head office as general sales manager for the East-of-Rockies area. Mr. Swanson joined Shell in 1923 as a bulk depot agent and became Chicago division manager in 1941. Another announcement revealed the ap-

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DEPARTMENTS

FRONT COVER: With approximately 75% of the children attending Kilgore, Texas public schools from families connected with the oil industry, it is only natural that oil terms are used to point up lessons. Here, Ann Hess, 6-year-old daughter of a Shell Oil employee helps a classmate at the blackboard.

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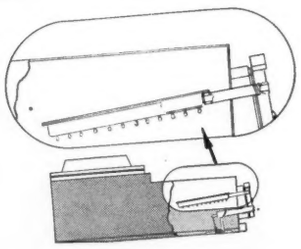
CATALYTIC OIL IS HERE, and *H. C. Little* BURNERS CAN HANDLE IT!

CATALYTIC OIL IS HERE—Looking toward the winter just ahead, the facts are these: Kerosene and No. 1 non-catalytic oil will be in limited supply (maybe extremely limited). A good deal of the available No. 1 oil will unquestionably be blended of straight run oil and catalytic oil. No. 2 furnace oil will undoubtedly be in supply—and in most sections of the country, especially the Middle West and East, *No. 2 furnace oil will be largely straight catalytic oil.*

***H. C. LITTLE* BURNERS CAN HANDLE IT!**—The new exclusive H. C. Little "CATALYTIC HEAT CONTROL" has been tested and re-tested in the laboratory and in the field. The more experience we get, the more tests we make, the more enthusiastic we become over the ability of H. C. Little burners and furnaces with the CATALYTIC HEAT CONTROL, to burn practically any of the lighter catalytic oils (including No. 2) with:

1. IMPROVED PERFORMANCE
2. INCREASED CAPACITY
3. EFFICIENT COMBUSTION WITHOUT CARBON
4. SUBSTANTIAL FUEL SAVINGS

On larger H. C. Little Burners, the new Catalytic Heat Control is ON TOP.



On smaller H. C. Little Burners, the new Catalytic Heat Control is INSIDE.

ALSO AVAILABLE FOR MODERNIZATION: The new Catalytic Heat Control, now standard equipment on all factory production, is also available for modernizing existing H. C. Little installations. H. C. Little dealers are now offering these marvelous fuel saving improvements to all their H. C. Little customers.

H. C. Little
Burner Company

Dept. 9 SAN RAFAEL, CALIFORNIA
Branches in 18 Principal Cities

pointment of Harry Jacobs, former sales manager, as executive assistant to P. E. Lakin, marketing vice president. Mr. Jacobs, with the organization since 1910, rose from oil field roustabout in Oklahoma to sales manager.

Roger Booth, chief engineer, Lennox Furnace Co., Marshalltown, Ia., recently accepted a new assignment as general sales manager, Marshalltown Division. Mr. Booth will continue to be identified closely with the engineering program of the company, and is instituting a campaign to teach better selling through better knowledge of the product. He joined Lennox in 1944 to take charge of the engineering program. After a short time in Plan Engineering he went into the general laboratory.

R. S. Blaser, new president of Allied Oil Co., Inc., Cleveland, Ohio, joined the company in 1928, after graduating from the University of Illinois, and has been with them ever since. Mr. Blaser, who began as office handyman at the age of 21, has known only the one employer. Allied, which merged recently with Ashland Oil & Refining Co., sent him out to solicit fueloil business in Canada in 1929 and the next year appointed him assistant sales manager. Subsequent promotions occurred, raising Mr. Blaser to the position of sales manager, vice president in charge of marketing and a member of the board of directors at the age of 31. During the years the company grew from an organization with only five male employees, including the two owners, to an important position in the fueloil marketing field with lake tankers, water terminals, pipelines, a refinery, some crude oil production and a burner sales division.

Kenneth G. Donald, at a special meeting of the board of directors held in New York City on September 10, was elected president, Jack & Heintz Precision Industries, Inc., Cleveland, Ohio, succeeding Byron C. Foy, resigned. Mr. Donald is, and will continue to be a vice president, Robert Heller & Associates, Cleveland management engineering firm. Mr. Foy is continuing as a director.

It's not my brand — but . . .

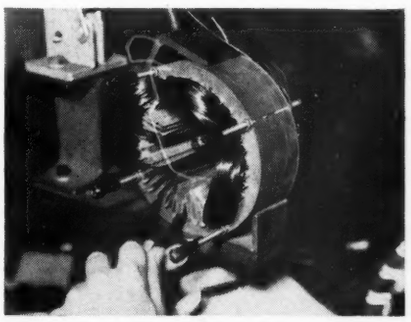
WARTIME cigarette smokers swallowed their taste and puffed whatever they could—whenever they could.

Many reputable oil burner manufacturers had a similar experience with "off-brand" motors in the postwar days of scarcity. Thousands of these motors have already started smoking. Thousands more will.

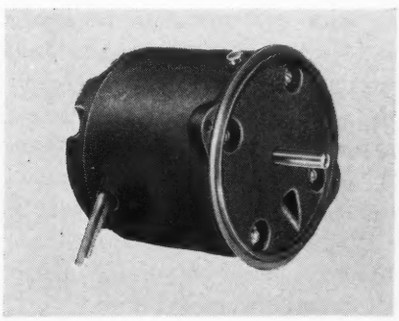
How many oil burners did you install with substitute motors?

Prepare now for winter by replacing doubtful power with proved Ohio Motors. Many of the first Ohio Motors built 20 years ago *are still in service.* Dependable performance explains why, through the years, one-third of all oil burners have been powered by Ohio.

Order Ohio replacement motors today from your oil burner manufacturer—direct from us if he cannot supply you. And specify OHIO on your next oil burner order—*for superior performance and complete customer satisfaction.* The Ohio Electric Mfg. Co., 5913 Maurice Avenue, Cleveland, Ohio.



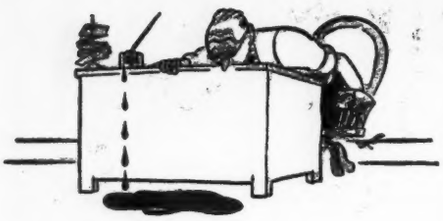
Improved winding techniques keep motor temperatures down.



Ohio Motors are built to NEMA or other specifications, as desired.

ohio MOTORS

The motor customers write about *enthusiastically.*



Editorial Leaks

This issue contains an appraisal of the current fueloil supply situation which indicates an easy oil market for all burners that are likely to be operating this winter. Not only is there now more oil in storage than a year ago, but more heating oil is being produced day to day than ever before. Distillate heating oils recently have been selling in New York harbor below the posted price—an indication of supply that cannot easily be ignored.

Copies of the paper which were made available before publication were closely studied by a number of oilburner manufacturers. Two have been so interested in the information that they have gone to some trouble to check local offices of the major oil companies, only to find that they cannot get a blanket guarantee of all the oil they may want next winter. In no case were they refused oil if they would take it immediately, but the conclusion has been drawn that the paper is in error because major companies would not give a spot buyer a guarantee of unlimited future supply.

It does not follow that everybody will have a surplus of oil this winter. The increased volume of fueloil available will not be evenly spread in every market, but there seems to be little doubt that there will be enough for all burners that possibly can be operating this winter. Present indications are that the tightest area may be the Pacific Coast, where a strike has tied up production and refining since early September. Other areas will have heating oil, even though major companies will not issue guarantees to all who apply.

◈

This year, for the first time in a quarter century, petroleum imports into the United States will be greater than exports, according to the U. S. Bureau of Mines. Last year we had an export balance that was only three-tenths of one per cent of the total domestic demand, but that is being wiped out and turned into a net import balance this year.

Exports last year of all petroleum, crude and products, represented 7.7 per cent of the domestic demand. Even so small an amount was considered by many to have been excessive in a year when the domestic demand was not fully met. However, nearly all the oil exported went to countries who are historic customers of the American oil business, and have no other established source. The export figures also include products sent to our own armed forces overseas.

Of the total crude exported last year, 83.6 per cent went to Canada and 9.4 per cent to France, with Cuba and Argentina getting lesser amounts.

Petroleum products exported, including heating oils went 29.9 per cent to the United Kingdom, 18.9 per cent to Canada, and the rest to such countries as Sweden, Australia, Holland, Belgium, Luxembourg and France, all former customers for oil and oilburners.

This year exports have been cut and imports have been increased to tip the balance in our favor. The wonder is not so much that we have become an importer of petroleum, but that we are able to step up imports while the rest of the world gets along on less of the world's total oil. Economic planning seems to be losing out to greater demand reflected in higher prices.

◈

There is a trend in trade advertising and promotion these days which seems to us to be based on dangerous premise. It says, in effect, "Give 'Em What They Want." The appeal is to dealers who are asked to handle a particular line of equipment because it offers a minimum of sales resistance.

Nobody can argue with an effort to reduce sales resistance, but the fallacy in the appeal is that the public does not know what it wants until the advantages of the purchase are pointed out. Oilheating dealers are not storekeepers in the accepted sense, and except for a brief period a year ago, they never have been. When the general public knows as much about oilheating equipment as the dealer does, the dealer as we know him today is out of business. That time is not in the foreseeable future.

The public does not "want" a heating plant of any description. People simply have to have them in most latitudes. Without that necessity most people would go through life very happily never owning a heating plant, or never having to be responsible for one. No part of the house with the possible exception of the foundation, ordinarily creates less pride of ownership in the average homeowner. Left to himself, he will pay as little as possible for "a furnace" and assume he will be able to heat the house.

Modern, automatic house heating is "wanted" only in a general and hazy way by most people. Few have any definite idea of the kind or type of heating plant or firing equipment they want, and fewer can recite the advantages of any particular one. We in the business are much too likely to assume the public knows our equipment and wants it. Any such assumption can be tragic in the months of hard selling that lay ahead. "Wants" are created. They do not grow by themselves.

Until he is sold on something better, the heating plant the prospect "wants" is the smallest, cheapest equipment he can find. If it does not heat the house he blames the man who sold it to him, not his own ignorance. It is the dealer's function in the most literal sense to create the customers' wants, not to sit passively in the role of storekeeper on the assumption that he knows what he should have.

Recent publicity on a consumer survey by *American Home Magazine* shows that 44% of American home owners want to heat with gas, 31% prefer oil, 12% coal, and the balance miscellaneous. The oil and gas relationship is such a reversal of what all other surveys have shown, in recent years, that it required looking into.

The discovery that this survey was made in February, 1948, at the low point in consumer confidence on oil supplies demonstrates how injurious publicity can originate and be broadcast to the country. It is important that the oilheating industry be continuously alert to correcting erroneous impressions, such as this one, and at the same time building public good will for oilheating at every opportunity. This year the Oil-Heat Institute has a professional public relations counsel. A great deal has been accomplished in getting less injurious publicity on oil supply. The industry should seriously consider permanently retaining a professional counsel of this type.

RIGHT TO YOUR FACE WE SAY IT!

"Unless you now have your fuel oil customers' tanks equipped with* VENTALARM® *signal, you should make plans to do so AT ONCE."

VENTALARM® SIGNAL *EASILY INSTALLED!*

Sounds hardboiled doesn't it? Who in blazes do we think we are anyway—to make a flat statement like that! Well, let's consider some facts.

1. We believe YOU, as an executive, are interested in SAVING MONEY for your company.
2. We know that VENTALARM signal DOES save money—big chunks of it!
3. We know you can check any statements we make. Several thousand oil companies use VENTALARM signal on ALL their customers' tanks. Nearly 1,500,000 VENTALARM signals are now in use.
4. We know that if you will ASK any of those companies they will say "the best money savers we ever bought."
5. Confidentially, we believe you must have thought of doing something definite about VENTALARM signal more than once. Let's translate your thoughts into ACTION. Your executive decision will start the ball rolling. Your favorite jobber will gladly supply the VENTALARM signals.

VENTALARM signal is easily installed on your customers' tanks. Use our LC model with the quick slip fit connection. No need to take down vents or do any pipe threading. Can be installed in 15 minutes.

The LC model VENTALARM signal is easily installed on old tanks. A quick compression fitting with bayonette lock eliminates any pipe threading. Takes only 15 to 20 minutes.

The LA model VENTALARM signal is installed on tank when new burner is being put in. Threaded top receives threaded vent pipe in usual manner. No extra time required.

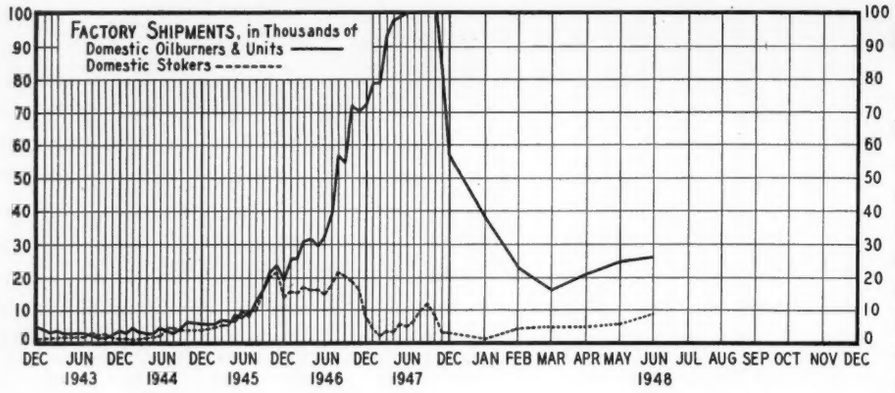
In stock at your favorite supply house

VENTALARM®

Whistling Tank Fill Signal

SCULLY SIGNAL CO., 76 FIRST ST., CAMBRIDGE 41, MASS.

Canadian Licensee — EMPIRE BRASS MFG. CO., LTD., London, Ontario

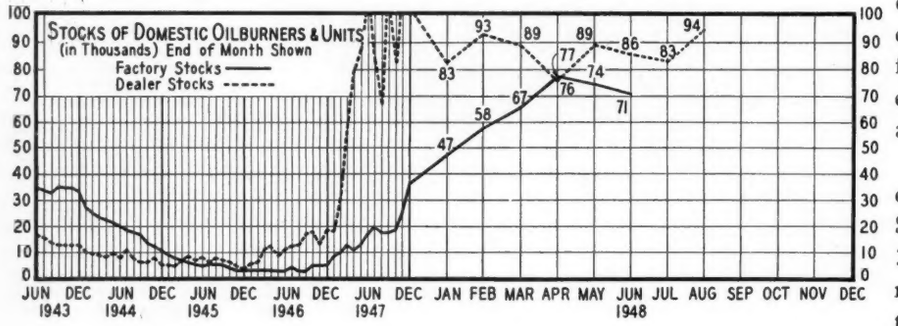

FACTORY SHIPMENTS, in Thousands of
Domestic Oilburners & Units ——
Domestic Stokers --------
DEC JUN DEC JUN DEC JUN DEC JUN DEC JUN DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
1943 1944 1945 1946 1947 1948

Shipments of Oilburners and Units

(Including Exports)

Adjusted to include manufacturers other than the 152 reporting to Census Bureau, FUELOIL & OIL HEAT's estimates of shipments are:

	JULY			SEVEN MONTHS		
	1948	*1947*	*Percent Change*	*1948*	*1947*	*Percent Change*
Conversion	20,928	83,978	— 75.1	123,354	533,746	— 76.8
Boiler units	3,093	5,953	— 48.0	16,522	31,058	— 46.8
Furnace units	6,229	13,453	— 53.7	40,133	100,993	— 60.2
All Domestic	30,250	103,384	— 70.7	180,009	665,797	— 72.9
Commercial	2,091	4,182	— 50.0	16,285	31,256	— 47.8
Total	32,341	107,566	— 69.9	196,294	697,053	— 71.8

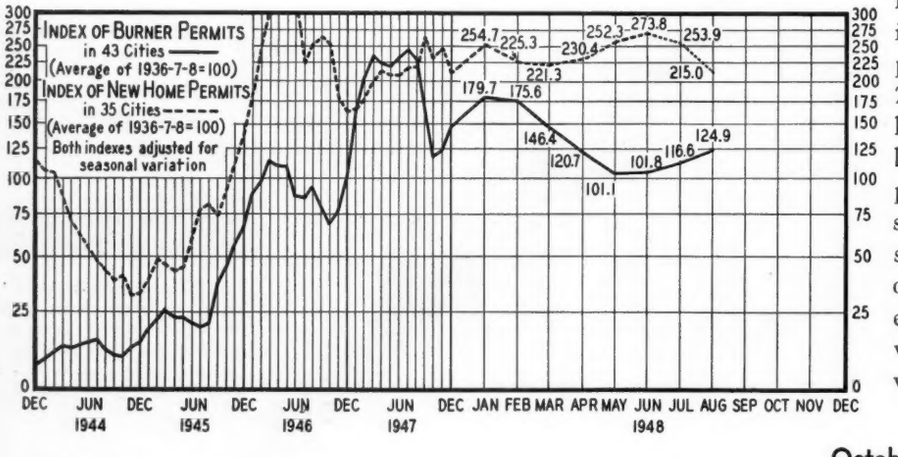

STOCKS OF DOMESTIC OILBURNERS & UNITS
(in Thousands) End of Month Shown
Factory Stocks ——
Dealer Stocks ------
JUN DEC JUN DEC JUN DEC JUN DEC JUN DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
1943 1944 1945 1946 1947 1948

August Minimum Retail Prices: Key Dealers

	CONVERSION BURNERS	BOILER-BURNERS	FURNACE-BURNERS
Highest	$500	$1090	$900
Lowest	245	360	325
Aug. Aver.	349	704	618
July Aver.	350	714	620

Price Index: Conversion Burners: January 1940 is 100%

WHOLESALE				RETAIL			
August	144.8	Six months ago	145.0	August	149.6	Six months ago	149.6
July	146.2	Year ago	139.4	July	152.0	Year ago	142.5


INDEX OF BURNER PERMITS
in 43 Cities ——
(Average of 1936-7-8=100)
INDEX OF NEW HOME PERMITS
in 35 Cities -----
(Average of 1936-7-8=100)
Both indexes adjusted for
seasonal variation
DEC JUN DEC JUN DEC JUN DEC JUN DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
1944 1945 1946 1947 1948

Oilheating Trends

AUGUST INSTALLATIONS OF domestic oilburners and units were approximately 47,146, as a preliminary estimate based on field reports. This represents a little more than half of the 84,232 installed in the same month of 1947. These installations were divided by types as follows: New homes 14,615; Replacements of old oilburners 6,600; Conversions from other fuels 25,931. Total sales for the first eight months of the year are estimated as follows: Replacements 60,053; New Homes 95,429; Conversions from other fuels 111,792; Combined 267,274. Omitting the replacements, new oil users added during the eight months were 207,221. This has added a little less than 6% to the total number of burners in use during the eight-month period.

If the eight-month total should turn out to be representative of a normal first eight months, this would point to a total for the year of 495,000, since the first eight months are ordinarily looked upon as being 54% of the year.

BURNER STOCKS: Stocks of domestic oilburners and units in dealer hands on September 1 were approximately 94,389, a substantial rise from the 83,581 reported a month earlier. The indication that dealers are getting ready for a Fall upsurge, or on the other hand it may mean that they are being influenced by factory announcements of price increases. Factory stocks on June 30, the latest available data, were 71,197.

NEW HOME BURNERS: Because of the belief in some quarters that the lighter fuels such as No. 1 and Range Oil might still be tight this coming season, while No. 2 and 3 fuels are easy, some major companies have been anxious to know how these requirements might stack up in connection with new homes. The reporting dealers this month estimate that 27% of new home installations currently being made are vaporizing pot-type burners and the balance mechanical or pressure burners. It was interesting to see that these percentages show only slight variation between various sections of the country. New England dealers estimated that 28% of new home jobs were pot-type, Mid-Atlantic 26%, Midwest 29%, and the West Coast 25%.

In asking the fueloil and oilheating

dealers what types of outlets were installing the new home pot-type equipment, their answers country-wide were as follows: Plumbing and Heating Contractors 28%; Direct factory sales to builders 20%; Sheet Metal Shops 17%; Appliance Dealers 10%; Oilburner dealers 9%; Furniture Stores 7%; Plumbing and Heating Wholesalers direct to builders 5%; Lumber Yards 2%; Hardware Stores 2%. Of course all of these types of outlets become oilheating dealers when they sell any substantial volume of oilfired equipment, but this is an interesting survey of their backgrounds.

CONSUMPTION BY NEW USERS: In estimating fueloil requirements, oil industry economists have always recognized that new oilburner installations use less oil on the average than old ones, primarily because they are more efficient, more homes are insulated these days, and the new homes are smaller. However, there has been no guide as to how much less than average the new installations consume. Dealers reporting this month from all over the country, say that their new installations made during the past year consume an average of 16% less oil than the total of old customers on their books. In general they determined this by a spot-check of "K" factors in the automatic delivery system. This saving figure applies just about equally to new oil users and to replacements, where old equipment is thrown out and more efficient burners put in.

SUMMER FILL-UP: By the first of September 73% of all oilheating consumers had had their storage tanks filled some time during the summer. This compares with 66% on the same date last year. Last year had been abnormally high because of the campaigns by both the burner and oil industries to get summer fill-ups. This year being even higher than last established what will perhaps be an all time peak. Normally, when there is no particular reason to drive for summer tank fills, only about 58 or 59% get a summer delivery up to October 1. There was some geographic variation this season. In New England 80% of customers had had summer fills; in the Mid-Atlantic states 67%; in the Midwest 76% and on the Pacific Coast 75%.

BURNER SALES OUTLOOK: The consensus of reporting dealers is that their total burner sales this year will wind up at about 42% less than last year. That is more optimistic than they have been at any time for the past several months. At the end of June they had forecast their sales at 43% below last year, and at the end of April 46%. If their present estimates prove to be reasonably good guesses, the indication is that total installations for the year, including replacements will be slightly over 500,000.

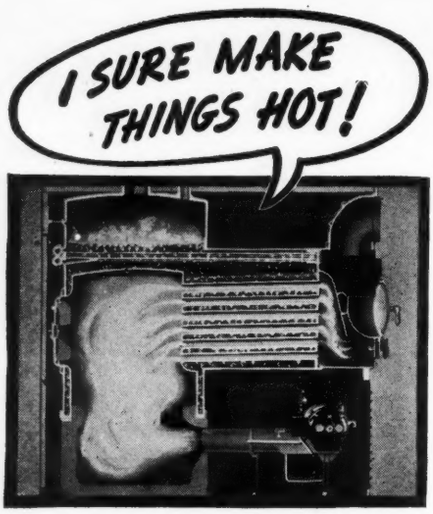
Oilburner* and Building Permits

OILBURNERS					DWELLINGS			
August		8 MONTHS			August		8 MONTHS	
1948	1947	1948	1947		1948	1947	1948	1947
141	416	1105	7423	Baltimore, Md.	3	281	2782	1923
..	..	..	..	Binghamton, N. Y.	18	10	96	75
..	372	..	..	Boston, Mass.	28	20	236	263
102	166	504	973	Bridgeport, Conn.	..	..	..	..
..	..	..	..	Buffalo, N. Y.	38	3	..	135
..	..	..	..	Des Moines, Ia.	75	125	649	623
..	959	..	4180	Detroit, Mich.	528	680	5401	6386
20	94	289	416	Elizabeth, N. J.	0	3	17	76
26	42	130	250	Freeport, N. Y.	..	..	..	..
..	..	..	..	Greenwich, Conn.	26	26	193	145
..	..	..	..	Hackensack, N. J.	2	2	..	25
100	65	616	1112	Hartford, Conn.	..	..	..	..
26	49	110	330	Irvington, N. J.	7	3	..	18
..	..	..	..	Lynn, Mass.	23	4	120	76
15	7	..	213	Meriden, Conn.	..	..	..	..
271	280	1196	1756	Milwaukee, Wisc.	160	133	1260	826
..	251	..	1200	Minneapolis, Minn.	..	116	..	631
20	37	152	208	Montclair, N. J.	..	..	..	..
38	62	151	331	Mt. Vernon, N. Y.	..	..	..	..
..	324	..	..	Newark, N. J.	..	..	..	..
66	48	442	429	New Bedford, Mass.	..	..	..	..
55	77	255	531	New Haven, Conn.	..	..	..	..
0	0	0	0	New Orleans, La.	..	..	..	..
11	32	86	217	New Rochelle, N. Y.	12	12	65	52
..	4650	..	36,238	New York City (total)	..	..	..	..
..	3803	..	29,500	Brooklyn-Queens	..	..	..	..
..	847	..	6638	Manhattan, Bronx, Rchd	..	..	..	..
112	71	948	627	Norfolk, Va.	59	281	415	509
1	2	9	11	Oakland, Calif.	..	..	..	..
86	344	693	1421	Omaha, Neb.	52	125	..	514
13	34	90	164	Orange, N. J.	3	0	11	5
31	..	166	..	Passaic, N. J.	..	..	..	..
61	133	297	716	Paterson, N. J.	12	9	73	42
635	1704	3224	8458	Philadelphia, Pa.	..	..	..	..
..	..	..	..	Plainfield, N. J.	7	4	62	106
886	89	4246	711	Portland, Me.	12	14	107	108
..	1187	..	6071	Portland, Ore.	104	100	1206	879
21	25	101	183	Poughkeepsie, N. Y.	..	..	..	..
87	69	400	743	Providence, R. I.	11	17	125	89
..	..	..	..	Reading, Pa.	5	3	26	17
78	168	523	1028	Richmond, Va.	67	99	717	459
105	189	1009	1568	Rochester, N. Y.	..	..	..	..
27	27	158	169	Rockville Center, N. Y.	13	49	149	129
18	21	116	199	Salem, Mass.	28	7	73	32
154	432	923	1740	St. Louis, Mo.	45	38	..	234
163	354	773	1951	St. Paul, Minn.	6	110	570	671
26	92	503	622	Schenectady, N. Y.	..	..	..	..
..	..	..	..	Seattle, Wash.	138	..	..	..
..	..	..	..	Springfield, Mass.	41	36	386	239
35	33	276	240	Stamford, Conn.	..	..	..	..
..	..	..	..	Trenton, N. J.	3	0	21	51
..	..	..	..	Utica, N. Y.	14	17	99	47
235	409	917	2095	Washington, D. C.	..	..	..	..
..	..	..	..	West Orange, N. J.	..	9	..	63
28	37	140	207	White Plains, N. Y.	2	13	61	44
101	217	548	682	Wilmington, Del.	3	16	91	66
..	133	..	1035	Worcester, Mass.	..	..	..	..
0	81	165	425	Yonkers, N. Y.	..	..	..	..
3763	5950	21,096	37,936	*Totals*	1407	2240	15,011	13,938
—36.8		—44.3		*Percent Change*	—37.1		+7.7	

*Permits are not total sales in each market since none are reported from suburban areas, which normally account for 20% to 60% of total sales in each market; nor are they an accurate index where enforcement is lax. Rightly used, however, they are a useful working index.

FUELOIL ALLOCATIONS: As of September 1, 51% of fueloil distributors throughout the nation had been told by their suppliers that they would be given the same amount of oil next season as they had last season; 37% were given increased amounts ranging from 5% to 33 1/3% and averaging 12.4%. The remaining 12% had been given no restriction of any kind. Present indications are that most of those who were told

(*Continued on page 127*)



Make sure that combustion chambers will not develop leaks or cracks by sealing them with Rutland Retort Cement.

Rutland Retort Cement is ideally suited for bonding fire-brick. Soft enough to work easily, but has enough body to be efficient. Economical to use, because it has more bulk than many other cements.

4 Other Rutland Products That Save Time and Trouble

Rutland Furnace Cement—For making joints smoke-tight and gas-tight when installing or resetting hot air furnaces and oil burning equipment. Provides 10 to 15% more bulk than many cements and does not fall or crumble as metal heats and cools.

Rutland Asphalt Paint—Genuine Gilsonite Asphalt base. Easy to apply. High heat-resisting qualities. Dries in about 4 hours.

Rutland Pipe Joint Cement—Seals joints tightly. Lasts indefinitely. Never becomes so hard that pipes cannot be disjoined easily.

Rutland Concrete Patcher—For repairing cellar walls and floors. Easy to use; just mix with water.

FREE Booklets Every Heating Expert should Have—Clip Coupon Today.

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Please send—free—your booklets on Rutland products for the heating expert.

Firm Name.....

Street.....

City.....

Name of Wholesaler.....

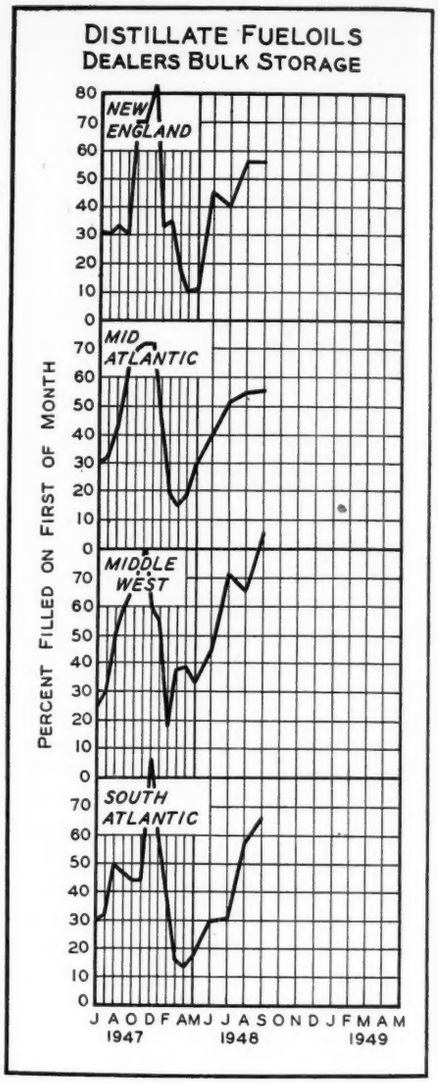
Fueloil Supplies

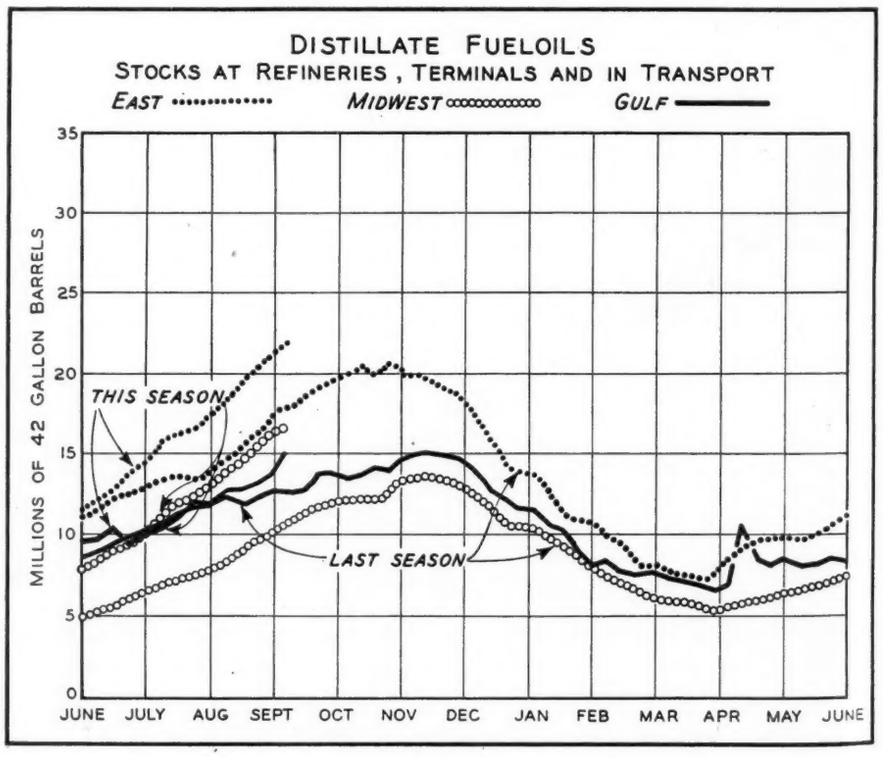
DISTILLATE STOCKS IN the local bulk tanks of fueloil distributors were 66% of tank capacity, an important rise from 54% a year ago, and from 59% on August 1 this year. Kerosene stocks, on September 1 were 65% of dealer capacity, compared with 49% a year ago, and with 60% on August 1 this year.

DEALER STOCKS
(Thousands of Barrels)

	No. 2 or 3 Distillates	*No. 1, Range, Kerosene*
East Coast		
9-1-48	9,143	2,705
9-1-47	7,929	1,458
Midwest		
9-1-48	3,388	1,865
9-1-47	2,324	1,986
East of Rockies		
9-1-48	12,531	4,570
9-1-47	10,253	3,444
Percent Change	+22.2	+32.7

Distillate stocks at refineries, in primary storage or in transit on September 18, the latest available data, were 57,354,000 Bbls. in the area East of the Rockies, compared with 44,197,000 Bbls. for the corresponding week of the previous year, a rise of 13,157,000 Bbls., or a rise of 29%. The strongest gains over a year ago are in the Midwest where stocks are up 54%, while on the East Coast and at Gulf ports, which serve the East Coast, the gain is but 21%. The strong Midwest upsurge accounts for recent reports of spot prices in that section being below posted.


DISTILLATE FUELOILS
DEALERS BULK STORAGE
NEW ENGLAND
MID ATLANTIC
MIDDLE WEST
SOUTH ATLANTIC
PERCENT FILLED ON FIRST OF MONTH
0 10 20 30 40 50 60 70 80
J A O D F A M J J A S O N D J F M A M
1947
1948
1949


DISTILLATE FUELOILS
STOCKS AT REFINERIES, TERMINALS AND IN TRANSPORT
EAST
MIDWEST
GULF
MILLIONS OF 42 GALLON BARRELS
0 5 10 15 20 25 30 35
THIS SEASON
LAST SEASON
JUNE JULY AUG SEPT OCT NOV DEC JAN FEB MAR APR MAY JUNE

Green Light

Supply Outlook Now Justifies Selling Any Burners You Can

by
Robert Gray*

THIS IS A GOOD time, at the middle of September, 1948, to discuss fueloil and oilheating. We have been through a year of about the toughest going that any industry could hope to see. We have been forced to mistreat a lot of our customers in ways that no businessman likes, and as marketers our profits during the period were held down by a lot of extraordinary costs. Our oilheating industry has taken a setback in the eyes of the general public that will take us some little time and considerable work to overcome.

Nearly all of that unpleasantness, however, is to be thought of in the past tense. Those gloomy recollections don't have to affect many of your activities or decisions now. Today there is scarcely a cloud on the horizon that can't be brushed aside with some display of energy; there is hardly a problem to which we don't pretty well know the solution if again we are willing to do the necessary work.

The time has come for the green light on every worthwhile oilheating and fueloil activity. It's time to make any oilheating installation that you can, in reasonably efficient circumstances, with confidence that the buyer will be able to get the fuel that he needs this coming winter. In using the phrase "reasonably efficient circumstances," the thought is that the price of oil is high enough that you would be doing the industry and the public an injustice to install burners in antique boilers and furnaces where you would not be able to get at least the FHA standards of burner performance, meaning an 8% CO_2 and a 600° stack.

Such optimistic statements could definitely not have been made three months ago . . . at that time there was anything but assurance of a suitable oil supply in the season ahead. During the last three or four months, the producing and refining ends of the oil industry have brought to pass an industrial miracle . . . they have swung the industry back into step with public needs. This has been an extraordinary undertaking, and oil industry management has been able to do this amazing job partially because there were two sharp spurs in the industry's flanks.

Two Effective Spurs

The first, and most effective spur, was the certainty that if the industry again failed to meet the full needs of the oilheating public, the government would step in and get a foothold that would be hard to ever shake loose. The second spur was, of course, abnormally high profits through this inflationary period. You've all seen the operating statements or the profit publicity on the major companies, and you know of course they are making more money than ever before. This money is not going into dividends for stockholders, but most of it is used for building the new facilities so necessary to take care of the high rate of growth in oil consumption by the public.

You will probably be thinking that not all oil men will agree that we are out of the woods on fueloil supply. That is true. There are several reasons for this, all of them quite sincere on the part of the men making the statements. Some important officials will say privately that we have reached the safe-point, assuming that things go on about as they are in the way of moderate expansion, but these men feel that if we tell the industry at large, or the public, that the shortage is over, there may be such a rapid growth of burner installations as to put the industry back into the doghouse. Again, some oil men were greatly surprised last winter by the unexpectedly large number of oilburners that had been put in during 1947, and so, in fact, were we. Ever since then, a few of these men have been jumpy over anything mentioned about oilheating, feeling that since their forecasts last year were so inadequate, the same thing might happen again.

The men in the oil industry that are today dragging their feet over coming out and saying that there is plenty of fueloil are simply discounting the magnificent job that the oil industry has done, or that even they personally have done, to restore the industry's balance of supply and demand in so few short months.

What are we to do when we get confusing or conflicting impressions from important men in the oil industry? How are you and I to know the course to follow in our own businesses? Perhaps we are inclined to depend too much on opinions of certain individuals, without making enough effort to dig out the known facts, and from these facts form our own opinions.

Facts and Figures

In every situation of any consequence, there are facts to be had if we look for them. The oil industry has always been particularly fortunate in this regard. We have many good fact-finding organizations.

Let's look over a few simple figures, and then make some fresh estimates on whether or not we face any troubles on fueloil next winter. First, how many

*This is a summary of a talk made before the North Carolina Oil Jobbers Assn. on September 14 and the Fueloil Council of the Merrimack Valley on September 16.

central heating oilburners are we going to have to supply next season? So far this year we have installed a little over 200,000 for new oil users. Replacements of old oilburners are not included in the figure. The indication, then, is that there can be as many as 400,000 new oil users added this year, because the first eight months normally represent about 54% of the full year's new burner crop. Of course the actual total oilburner sales may well reach a half million, with the difference represented by replacement sales. But since these replacements would not bring new oil users they do not have to enter into our calculations of fuel requirements for the winter.

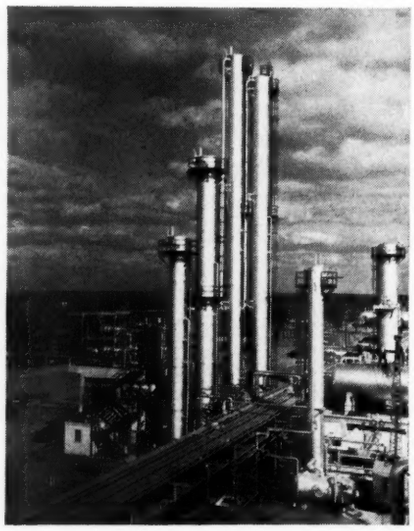
When this calendar year started, there were just about 3,650,000 central heating oilburners in use. Since we will apparently add about 400,000 to this number during 1948, that would be adding 11% in number of burners operating by the end of the year. These new burners won't use quite as much oil as the old ones, because heating plants today are more efficient and because they go into smaller houses, so the actual increase in the amount of oil needed will be around 10%.

How can we tell at this time of the year whether or not the industry is getting in shape to handle that increase? The fact is that to be on the safe side, the industry should show signs of being able to handle more than a 10% increase, because while that does allow the weather to be as severe as last season, it does not cover the double contingency of having a winter that cold and at the same time improving the stocks around the country so that we won't have spot shortages.

Actually, there is also a third point to watch out for. People voluntarily saved a lot of oil last winter because they were afraid of running out or because they couldn't stand the high fueloil prices. They will not save as much this next season because much of the fear of shortage will be eliminated, but on the other hand they will of course continue to save quite a lot over what they had used in earlier years because the oil cost will continue to pinch their pocketbooks. We'll have to make an additional allowance then for the fact that there will be less voluntary saving.

To be safe on all four of these points —the additional burners, a possible severe winter, sufficient stocks to avoid local shortages, and less voluntary saving by the consumers—we may need as high as 15% more fueloil than we had last season.

Are there any figures that would indicate how the oil industry is stepping up to this responsibility? We didn't think very much about these pre-season checkups in earlier years, but after the bad experience we had last winter, it is only natural that we should begin to study the signs as early as we can recognize them.



Everyone in the industry knows that all fueloil cannot be made in the winter when it is needed. The refiners must store up a good batch of it during the summer. Up to now, it has not been necessary to know just how much should be stored up in the summer, but we can find some interesting comparisons of summer activities between years when there was no trouble and last year when there was a lot of it, and possibly that will show us why we stubbed our toes last season. Then we can compare what has been happening this summer with the industry's record of last summer to learn how far the industry has actually gotten back into step.

During the summer of 1946, there was just about enough fueloil piled up in storage to be able to start the 1946-47 heating season in good enough shape that there would be very little supply trouble during the winter. During that winter of 1946-47 there were minor shortages in a few Midwest cities in late February and March, but for the country as a whole supplies were ample.

Suppose, then, that we use that season as a yardstick, or as representative of a period when there was no serious trouble. In measuring summer activities we will start with June 1 because that is actually the terminal point between one oilheating season and the next. On that date in 1946, the primary distillate fueloil stocks in the country were 33 million barrels; during the three summer months 72 million barrels were produced by the refineries, and at the end of the three months, or August 31, the terminal stocks were 53 million barrels. Thus the summer stock buildup was 20 million barrels. During that following winter we had an obligation to supply fuel to an average of 2,821,000 oilburners.

By the next winter, or in other words the winter just past, we had in American homes an average of 3,650,000 oilburners, or 29% more than we had the winter before. Again, considering that the new burners do not use quite as much oil as the old burners, we can clearly see that we needed at least 25% more oil this past winter than in the season before. Keep that 25% figure in mind, and let's see what the industry had done about it during the critical summer months of getting ready for that load. That was the summer of 1947, or a year ago. The opening stocks on June 1 were 37 million barrels, or up 12% from the previous year. However, during the three summer months the total refinery production of distillate fueloil was only 76 million or a rise of just 5%. Then the stocks at the end of the summer were 55 million barrels, or just 4% more than they had been the year before. Remember that this was at the end of the 1947 summer with the industry walking into a 25% heavier winter load. The miracle is that no one froze.

Now we can make a more pleasant comparison. Remember that this coming season will see the need for not over 15% more fuel, to be on the safe side on all four points of contingencies that we mentioned. What has the industry done this summer to get ready for that increase.

We started off on June 1 with stocks of 39 million barrels or only 5% up, which is not so good, but then we put on steam and produced during the summer 93 million barrels, which was 23%

better than last year. The summer's closing stocks at the end of August were 66 million barrels and here again we see a similar increase, or 21% over a year ago. Those are national figures. East of the Rockies the rise over last year is 30%. This, then, is our strong start on meeting a maximum rise in demand this winter of no more than 15%.

That certainly makes an excellent showing, but before deciding that we are sure about the whole business, let's look at the less favorable factors and see if they are going to hold us back. We mentioned that 1946 was a good year for a measuring stick because we had plenty of oil that following winter. We are not actually in quite as good shape today as we were at this same date in 1946, considering the number of burners that would need oil in the winter ahead.

Dealer, Consumer Stocks A Factor

During that summer of 1946 the refiners turned out distillate fueloil to the tune of 72 million barrels; this was equivalent to 1,071 gallons for each oilburner that would be in use that next season. During this past summer the refinery output was equivalent to only 966 gallons for each oilburner to be in use next winter, if we install the full number that we mentioned, or 400,000 new oil users. Again back in 1946 our closing stocks at the end of the summer would provide 790 gallons for each oilburner needing oil for the following winter, while this year the corresponding figure is 688 gallons. These two comparisons, then, are less favorable, but we can discount most of their bad effect with a couple of observations. Dealer and consumer stocks, which are never accounted for in the official figures we have been quoting, are at least five million barrels higher today than they were in 1946. This would offset fully half of the unfavorable comparisons that we have just seen.

The big reason, though, why we don't need to worry much over those comparisons is that in the summer and fall of 1946 the whole industry was going along complacently without the slightest concern over fueloil supplies or where to put them . . . it had never experienced trouble in peacetime. Today every oil man is alerted, he's on the ball at each level of the industry to get out the stuff and put it just where it's going to be needed. More than that, he has today a real profit incentive to make more and more fueloil, because that product is blessing his bank account more than ever before. That was not true in 1946.

Anyone wanting to disagree with our conclusions could rightly say that we have used some figures categorically that should be taken with reservations. For example, we have used total distillate fueloil figures as though all of that fuel would be used in oilburners . . . it won't of course, but the preponderance of it will. It could be pointed out that diesels, which also constitute a part of the distillate demand, have grown faster than oilburners and accordingly will eat up much of the gain. Keep in mind, then, that the demand for diesel fuels is less than a third that of oilburner fuels and you'll see that their growth cannot change the implications of this discussion, nor upset its general conclusions.

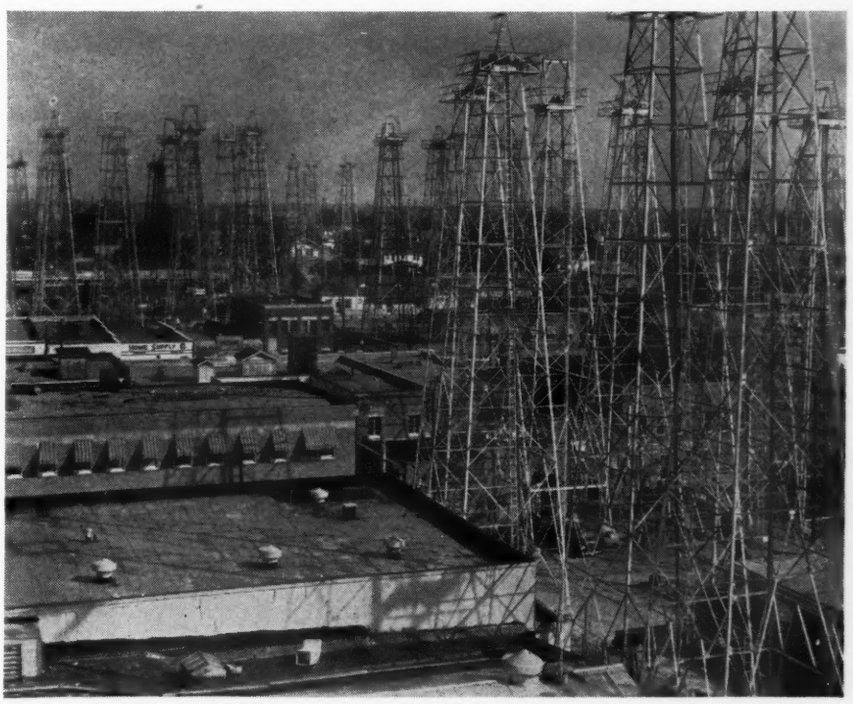
The whole lot of figures we've been looking at certainly add up to a green light on oilburner installations this fall for the country as a whole and for the industry as a whole.

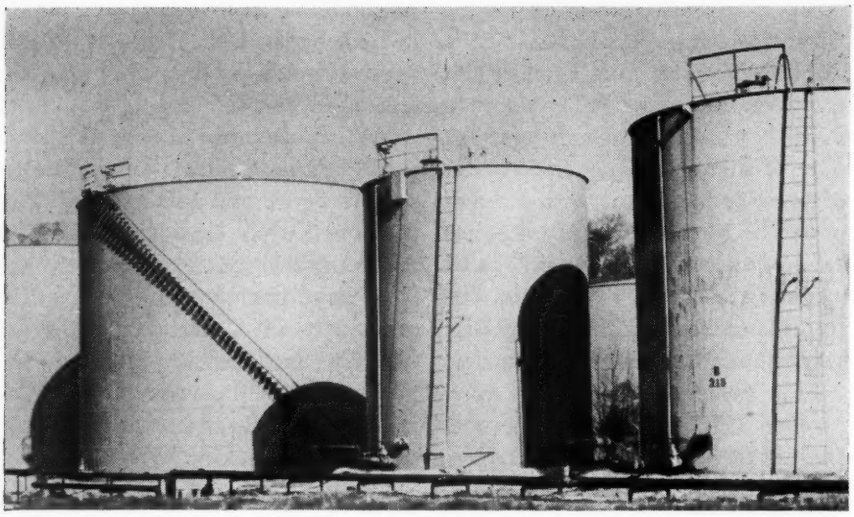
But how about individual cases? What can you do if your supplier has said that you can have no more fueloil this coming winter than you had last season? There is a lot of merit in having an exclusive source of supply for fueloil, but only so long as your supplier can give you all you need within reason. When he cannot, if he is the right sort, he will be glad to see you get what you can somewhere else.

We have never liked uniform allocations . . . treating all marketers alike on supply. To try and hold an alert, alive dealer back to the level of the loafer is a deadening thing . . . it destroys the red blood in an organization. When a man so conducts his business that he serves oilheating extra well and as a result the public wants to buy from him, that is reason enough for him to get the supply that his public needs.

The point for you to remember is that the oil is going to be available, in the hands of someone, to easily take care of ten percent more burners than there were in your market last winter. So if you are content to get along with the same customers you had last season, some competitor can then go up 20 percent.

Let's not jump to the conclusion that, because there will be enough oil this winter for all of the new burners that can be added by the dealers this fall, we can go a step further and say that there will be a strong surplus. That would be stupid, whether we say it or whether we just act like it. We still want people to save oil, to burn it effectively, if for no other reason than that it is expensive and we mustn't allow the idea to get around that oil is a luxury fuel. So educate your people, all in the interest of dollar sav-





ing to them . . . but not again discussing it from a shortage angle, for that topic is dead, unless some day we start shooting again.

How is a man going to sell oilburners this Fall—how is he going to create new fueloil business—when he feels that the public has been scared to death on oil supply and when the fuel costs so much that people don't want to burn it?

Of course neither of those assumptions is actually true. Last April in a survey made for us by one of the professional public opinion outfits we learned that among those good oilburner prospects who would not then buy a burner, three-fifths said it was because they were afraid of oil supply. Another survey in August indicated that the number had dropped to about a third. In other words, two-thirds of the public are no longer concerned about future oil supplies.

When good burner prospects don't buy today it is more likely because they think prices are out of line. Many have said so. Actually, oilburner prices are up less than the average cost of living. They are only 52% above 1940. It's true that fueloil prices are up more than average living costs, but that is a temporary condition designed to speed up immediate production. In the long run they will level out.

But even at present prices, the cost of an oilburner plus the cost of the oil that it will burn over the next two or three years, lumping the two together, will not be up any more than the average of all living costs. When we fully recognize this point, we'll understand that oilheating can readily compete on equal terms for its fair share of the national income.

On the other hand, nothing is going to bring back the easy selling days of last year. The lush postwar oilburner market is over. It was over last winter but we didn't think of it because oil shortage was filling the headlines. Now we are back to the selling situation that we had in 1939 or '40, when it was necessary to hunt up people and tell them again the benefits of oilheating and ask them to buy.

A good many other industries are asking for their dollars, but we have one real advantage if we will only make the most of it. Inherently folks are sick of coal shoveling and won't resist too hard if you will take the trouble to do some sales work of the old-fashioned variety.

Again and again we find in surveys that at least 45% of our population wants to heat with oil whenever they make a change, while only about 19% of them actually have it. The other millions know that it is good and, whether they know it or not, they are only waiting for your sales effort to get them switched to oil now instead of in the distant future.

During the war years the growth of your business was virtually stopped. In 1946 and '47 it skyrocketed, with very little actual planning or merchandising on your part. That adds up to six years during which you did almost no real marketing . . . you were a sort of combination warehouseman and ordertaker.

Now we've come back into a competitive period, which is always the best kind of year for taking a real interest in your business, for matching your wits in a friendly way and for rebuilding your foundations.

We are about to again separate the sheep from the goats. Those who can't get over their complacent habits of the past six years will logically lose ground to the competitors who recognize that things have changed.

The green light has flashed. The green light means "Go Now" before the fellow behind starts tooting you out of the way.

Pogue Issues Annual Petroleum Industry Study

FINANCIAL RESULTS of the petroleum industry in 1947 showed marked upward changes from 1946, though increases "are revealed to the temperate in the light of vastly increased capital requirement and with due regard to the purchasing power of the dollar," according to a study, "Financial Anaylsis of Thirty Oil Companies for 1947," which recently issued by the Chase National Bank, New York. For the first time, the financial results are presented not only in "current" dollars but also in "prewar" dollars, thus measuring the effects of inflation on the petroleum industry's operations.

This annual review, prepared by Joseph E. Pogue, vice president in charge of the Bank's Petroleum Department, and Frederick G. Coqueron, staff associate, supplements previous reports and provides a continuous series of data for the 14-year period 1934-1947 on a group of companies which represent about two-thirds of the aggregate investment of the industry. The new booklet, more comprehensive than those of previous years, contains 21 tables and 7 charts as a part of its 30 pages of text.

Joseph F. Heil, president, Heil Co., Milwaukee, Wis., directed the organization and presentation of the recent industrial show, sponsored by the Wisconsin Industries Committee, as part of the Wisconsin Centennial celebration. More than a million and a half visitors during the month of August witnessed the displays, which the committee had spent a year in assembling. Designed to tell the story of free enterprise, exhibits were divided into twenty-four basic groups.

Burner Testing Studies

Laboratory Finds Novel Correlations Between Firing Results

by
B. R. Walsh*

WITH THE ADVENT of the catalytic cracking processes developed during World War II to meet required changes of gasoline properties, Gulf foresaw the desirability of a comprehensive study of catalytic cracked fueloils in order to work toward the establishment of suitable control specifications that would insure the continued supply of maximum burning-quality oil to present and future owners of all types of oilburners. As a result, in the spring of 1946, Gulf Research & Development Company initiated a program of fueloil tests in the Fuel Oil Laboratory shown in Fig. 1. This laboratory is initially equipped with three rotary wall flame type, two high pressure gun type, one low pressure gun type and three space type burners. These burners were selected to provide a good cross section of the more than four hundred makes of oilburners manufactured.

The object of the test program is not to determine the relative merits of various oilburners. It is threefold in that it is to permit:

1. Analysis of the burning and stability characteristics of various fueloils with a view toward determining the properties oil must have to give the best performance in all types of burners, present and proposed.
2. Development of operation and adjustment data for use of service personnel for assisting the public in obtaining trouble-free burner operation.
3. Study of burner design improvements (mechanical accessories).

These objectives are important when it is realized that the trend of future refining operations is toward 100 per cent production of catalytic distillates in view of the demand for high octane motor fuel and that recent estimates indicate that by 1955, over 3,000,000 additional domestic oilburners will be in use. It is to be noted that, generally speaking, catalytic fueloil contains about 7,000 Btu more heat value per gallon than prewar straight-run fuels. It also has a lower pour point and less paraffin content so that it is easier to handle and is less likely to clog fuel lines in freezing temperatures.

The tests are conducted in a manner to increase the severity of the conditions under which burners ordinarily operate in a household so that the same comparative results may be obtained in shorter time. In fact, in some cases, a good burner has been converted into a sensitive one in order to accentuate the burning characteristics of oils under test.

Because the critical period for borderline heating plants is during the fall and spring when the burner runs less frequently and the furnaces are cold when the burners go on, tests for soot accumulation are conducted using a timed cycling arrangement whereby the burner is operated for a short period each hour. Under this condition the accumulations of soot and carbon deposits are accentuated since there is a greater tendency for carbonization when starting up with a comparatively cold combustion chamber than when the burner is operated more frequently and the combustion chamber is maintained at higher temperature. Should there be a condition where the carbonization builds up on the electrodes to such an extent that short circuiting occurs, operation with a short "on" cycle accelerates this condition whereas with a long "on" cycle carbon may not accumulate or, if it does, the accumulation may burn off.

A curve, Fig. 2, is plotted of the daily average of the peak stack temperatures during the "on" periods versus days to show the stack temperature rise during the test. The test is continued for a sufficient time following leveling off of stack

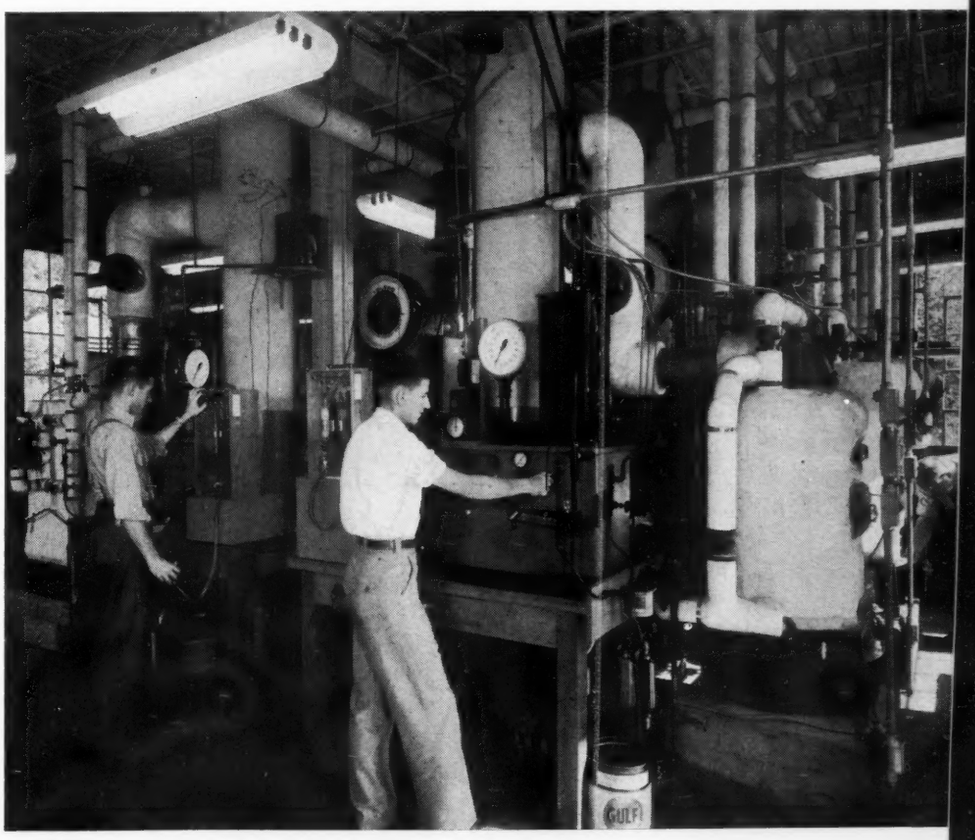


Fig. 1. *Gulf fueloil laboratory.*

*Section Engineer, Gulf Research & Development Co., Pittsburgh.

temperature to insure that soot accumulation on the boiler heating surfaces has reached a stabilized condition. At the conclusion of the test, the accumulated soot is carefully removed from the boiler heating surfaces and weighed so that the accumulation (lb. soot per square foot of heating surface) may be determined. Measurements of fuel consumption are taken and lb. soot per lb. fuel also determined. This procedure has revealed some interesting information; namely that some catalytic cracked fuels produce a more resinous soot than straight-run fuels, in which case, while accumulation may be heavier with the resinous soot, the stack temperature rise may be less. It appears that straight-run oils usually give a light, fluffy soot very loosely deposited, having low coefficient of heat transfer and that with catalytic cracked oils the soot has more binder of resinous by-products and finally becomes rather like paint or varnish, having considerably higher heat conductivity. This is important because it means that for a given thickness of soot deposited on the boiler heating surfaces, less heat loss up the stack will obtain for catalytic cracked oil than straight-run oil.

In addition to the above soot accumulation test, cold start performance tests of short duration are conducted on the fuels to determine their starting and smoke-producing characeristics under different conditions of excess air (CO_2). In this test the burner is operated on cycle over a wide range of air inlet openings. The air inlet is changed in increments during each "off" period and the character of fuel ignition is observed at the start of each "on" period. Readings of smoke density (Shell Smokemeter disc number) and CO_2 are taken and from these data curves are plotted of smoke density and CO_2 versus air inlet opening, Fig. 3. From these curves a second curve, Fig. 4 of smoke density versus CO_2 may be plotted for any given oil. In this test the draft and fuel flow rate are maintained constant. It may be noted on Fig. 4 that a horizontal line drawn for any suitable permissible smoke density (3½ Shell smoke disc for example) permits the determination of a range of CO_2 values over which satisfactory operation as regards smoke density may be obtained.

Satisfactory CO_2 Range

The CO_2 range for satisfactory starting, under the condition of a comparatively cold combustion chamber, is represented on Fig. 4 by the heavy segment of the curve. Thus, the range of CO_2 over which both satisfactory ignition and permissible smoke density will be obtained is defined by that portion of the heavy segment of the curve falling below the 3½ smoke disc. An oil whose performance under the above conditions results in a curve similar to that shown for oil "B" on Fig. 4 is totally unsatisfactory.

The advantage of this curve is that it is easily understandable and practical and it covers two important factors influencing comparisons of fueloils; that is, its smoke producing and start characteristics.

In addition to the factors of starting, smoke and soot (accumulation and insulating quality) determined by burner tests, consideration is also given to factors of oxygen stability in storage (resistance to chemical reaction—color change), sedimentation (sludge and gum formation), corrosion and odor. Limits are set on each of the above factors and an oil is termed unsatisfactory by the Laboratory if it exceeds any one of these limits. An oil, to be approved must fall below the limits of all of the above factors and the further below these limits it falls, the higher its rating.

In connection with the investigation of the stability, sedimentation and corrosion characteristics of fueloils, accelerated storage tests are in progress. These tests are conducted in a storage and fuel handling system typical of household installations and are run in a manner to simulate a full year's operation. Oil is circulated through a closed circuit comprising a pump, a 275 gallon storage tank and a filter, and at intervals, oil samples are removed from the

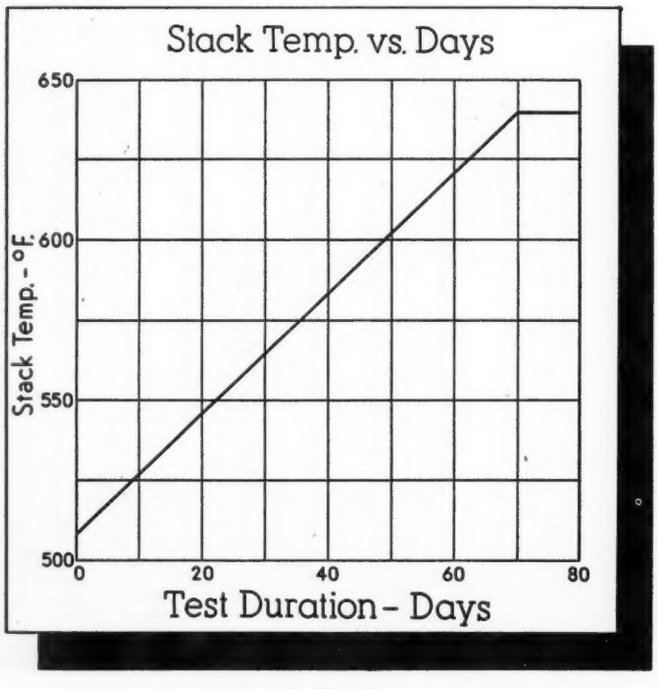


Fig. 2

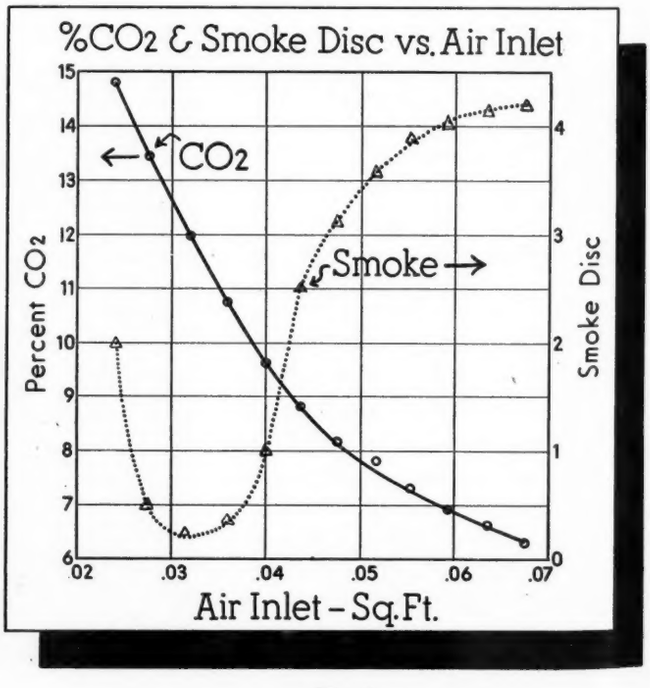


Fig. 3

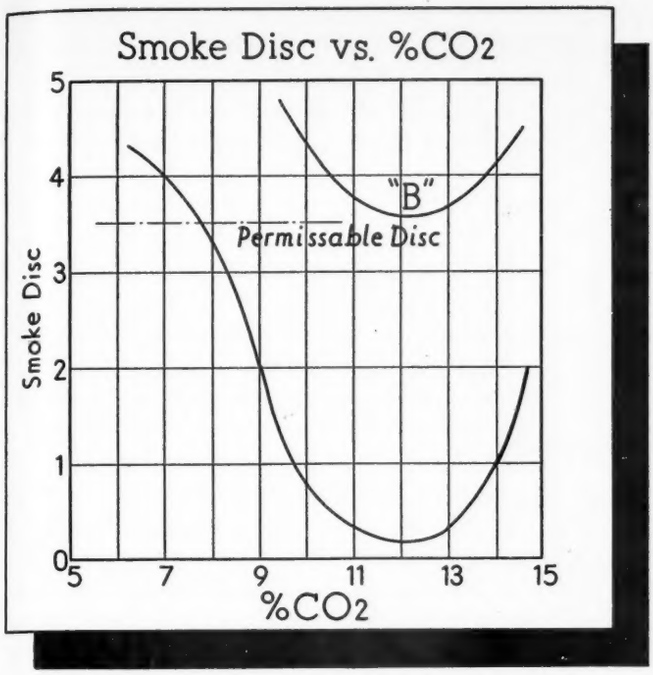


Fig. 4

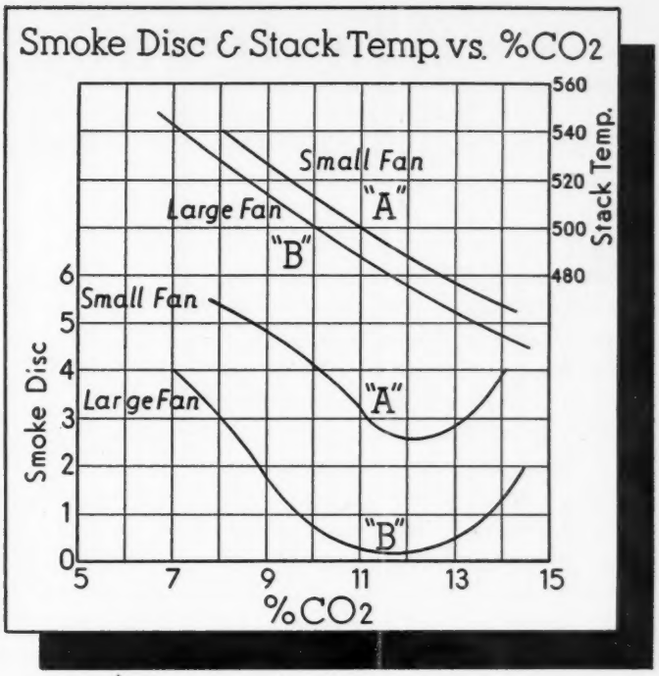


Fig. 5

system so that replacement of the drained oil can be made to simulate actual refills. At the completion of each test, the tank is drained and examined for rust and sediment and the circulating system is disassembled and all parts are examined for the presence of gum and sediment deposits and critical parts are weighed to determine if there was any loss due to corrosion. Two of these units are in daily operation.

The determination of a family of smoke disc versus CO_2 curves for various oils, Fig. 4, permits the correlation of smoke density for various oil properties for constant CO_2 values. While smoke density may be compared with diesel index, aniline point, per cent aromatics, gravity and various boiling points as shown by Sullivan and Glendenning,[1] tests conducted in the Gulf Fuel Oil Laboratory also indicate good correlation of smoke with carbon-hydrogen ratio and cetane index.[2] This latter characteristic is actually the calculated cetane number, from Equation 7 of reference 2 derived from the API gravity and mid-boiling point of the fueloil. The burning index proposed by Reid and Hersberger[3] is also correlated with the API gravity and mid-boiling point of the fuel. The value of these relations is that the results obtained from burner tests can be correlated with laboratory inspection tests on fueloils for specification purposes.

It can be seen that some of the same factors which affect smoke formation in a diesel engine act similarly in a fuel-oil burner. Some of these factors are poor atomization, insufficient turbulence, overrich mixture, poor combustion chamber shape, and delayed ignition. Thus, it is apparent that an oil-burner should provide good atomization, high turbulence and good distribution of air-oil mixture in order that it may be operated as near the chemically-correct air-oil ratio as possible; that is, with maximum excess air. Delayed ignition can be caused by the presence of chilled metal surfaces and, in this event, the oil hitting these cool surfaces may produce soot or escape through the stack as smoke or unburned oil.

Referring again to the smoke density versus CO_2 curves, Fig. 4, it is noted that the optimum value of CO_2 may be selected at which the particular burner may be operated for lowest smoke emission regardless of the oil used (11-12 per cent CO_2 for this burner). A still further advantage of these curves is that, for a given oil, the effect of mechanical adjustments in the structure of the burner becomes readily apparent. For example, the effect of fan size in a rotary wall flame burner on smoke disc may be noted on Fig. 5 where curve "B" represents performance obtained by increasing fan diameter over that used for curve "A." The effect of similar changes in burner arrangement to obtain improved pre-mixing of air and fuel may be determined in like manner.

[1] FUELOIL & OIL HEAT—May, 1945, pg. 38.

[2] *Journal of the Institute of Petroleum* (London), Vol. 30, July, 1944, pg. 196.

[3] FUELOIL & OIL HEAT—January, 1947, pg. 90.

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Carl A. Sawade has been appointed eastern district sales supervisor for Dunkirk Radiator Corp., Dunkirk, N. Y. and Utica Radiator Corp., Utica, N. Y. Both are separate corporations, but it has been found feasible to combine selling efforts due to geographical location and the fact that the products of the two are complementary. Mr. Sawade, long identified with the boiler and radiator industry, started with U. S. Radiator and later became sales manager for Continental Heater Corp. In 1927, when that company and five others merged to form National Radiator Co., he became an executive in the new company's sales promotion and advertising departments. In 1934 he resigned to supervise sales for the Utica and Dunkirk companies. An office will be established in the vicinity of New York City but present plans provide for a virtually unchanged factory and field sales organization.

The Ignition Transformer

Its Contributions To Satisfactory Oilburner Performance

by
J. A. Uttal*

More than 3,000,000 oilburners in the United States depend upon the unfailing operation of ignition transformers designed to meet the special requirements of the oilburner industry. The ignition transformer is actually a type of "high reactance" transformer. By "high reactance" transformer, we mean a transformer that limits the load current by appreciable reactance in addition to changing the voltage in an electrical circuit.

The ignition transformer must be of the "high reactance" type since the arc current in the igniting circuit would increase indefinitely and damage the electrical system unless some means of limiting the current were used. How does a "high reactance" transformer meet this requirement?

To answer this question let us refer to Fig. 1 which illustrates schematically the construction of a "high reactance" transformer. The primary and secondary windings are assembled on a magnetic core structure. In addition, magnetic steel core material is placed between the windings. This part of the magnetic structure, known as a "magnetic shunt," may be inserted as a separate manufacturing operation or can be made a part of the main core structure.

When voltage is applied to a "high reactance" transformer connected to a load, magnetic flux is established in the core. Fp represents the flux which is associated with the primary winding. Similarly, Fs is the flux associated with the secondary winding; Fm is the flux which is associated with the magnetic shunt.

In order to better understand the effect of the magnetic shunt upon the transformer operating characteristics, we should recall that the core steel provides a path of much lower resistance for the transformer flux travel than does an equivalent air path. In magnetic terminology, the resistance to flux travel is called "reluctance." This is proportional to the path length and inversely proportional to the magnetic permeability and cross-section of the path perpendicular to the flux flow.

When there are parallel magnetic circuits providing alternate paths for flux travel, the amount of flux in each parallel path is inversely proportional to the reluctance of the path in which it is flowing. In this respect magnetic reluctance is like electrical resistance to current flow and, therefore, we can combine parallel and series reluctances of magnetic circuits in the same manner as we combine resistances in electrical circuits.

In Fig. 1 the primary flux path, EDAB, and the secondary flux path, BCFE, both include the center and outside legs of the transformer core. However, the leakage flux path, BE, includes the magnetic shunt and air gap G. The reluctance of the air gap, G, (even though the air gap may be very short compared with the length of the secondary flux path BCFE) is considerably greater than the reluctance of the secondary magnetic circuit. When there is no current flowing in the secondary winding, the primary flux will divide

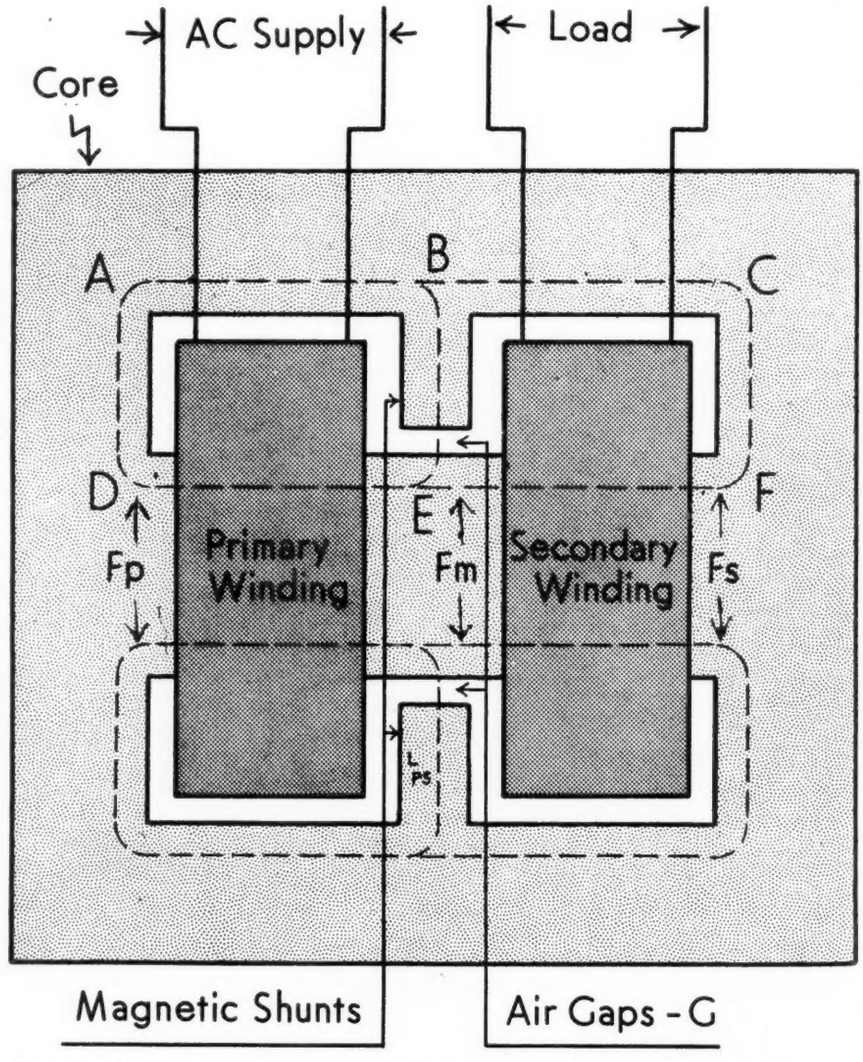

Fig. 1. *Sketch of construction of "high reactance" transformer, illustrating flux distribution.*

*Ballast Sales Div., General Electric Co., Fort Wayne, Ind.

between the leakage path and the secondary path in inverse proportion to their respective reluctances. Since the reluctance of the leakage path is considerably greater than that of the secondary path, it is reasonable to expect that most of the primary flux will link the secondary winding and that there will be very little flux in the leakage path, BE. Therefore, under no-load condition the secondary output voltage will, for all practical purposes, be determined by the turn ratio of the primary and secondary windings.

Since the main purpose of the "high reactance" transformer is to limit the secondary current, let us now consider the effect of placing a load on the secondary. In oilburner applications the actual load conditions that require the use of the "high reactance" transformer approximate a short circuit.

Short-Circuited Secondary Winding

When the secondary winding is short-circuited, the maximum amount of current flows in it. From fundamental electromagnetic induction theory, it can be shown that the current flowing in the transformer secondary winding opposes the primary current producing it by mutual induction. This principle can be stated in another manner, namely that the flux associated with the secondary load current opposes the primary flux which produces it. Since the secondary flux linked with the load current opposes the primary flux, it can be stated that when load current flows in the secondary winding, it is in effect, increasing the reluctance of the secondary magnetic circuit with respect to the primary flux. Therefore, as the secondary load current increases, more and more of the primary flux travels through the magnetic shunt and air gap, G, which are in parallel with the secondary magnetic circuit.

As the flux increases in the magnetic shunt, less flux is available in the secondary magnetic circuit for inducing voltage in the secondary winding. Consequently, when a short circuit condition is reached, there is only sufficient secondary voltage to maintain a predetermined value of short circuit current. All other factors remaining unchanged, the magnitude of the secondary short-circuit current will depend upon the

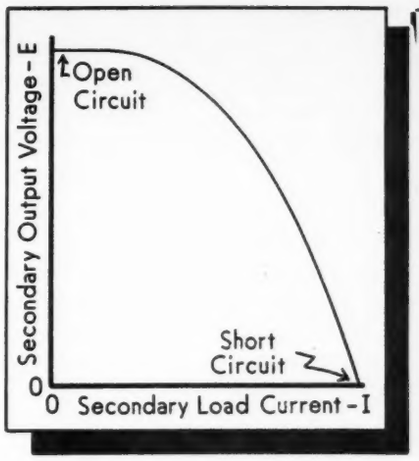

Fig. 2. *Operating characteristic of a typical "high reactance" transformer with a resistive load.*

relative magnitudes of the reluctance of the shunt path and the secondary magnetic path. If the reluctance of the shunt path is increased with respect to that of the secondary circuit, then the secondary short circuit current is increased and, conversely, if the shunt path reluctance is lowered, the short circuit current is decreased.

What factors affect the reluctance of the shunt magnetic circuit? As previously stated, the reluctances in any magnetic circuit can be combined in series or in parallel similar to resistance in an electrical circuit. Let us examine the shunt circuit from this standpoint. It is obvious from Fig. 1 that the shunt magnetic circuit consists of a steel path in series with an air gap G, whose reluctance is very much greater than that of steel. In fact, the reluctance of the air gap is so great in comparison with the steel portion of the shunt circuit that we can neglect the latter and consider only the magnitude of the former.

As one would expect, if we increase the length of the air gap, G, the reluctance of the shunt magnetic circuit is also increased and, conversely if we decrease the air gap length the reluctance of the shunt magnetic circuit is decreased. Thus, a relatively small air gap, located as shown in Fig. 1 and measured in thousandths of an inch, determines the load characteristics of the "high reactance" transformer.

We have considered the open circuit and short circuit operating conditions. A more complete picture of the voltage-current relationship in the secondary winding can be obtained by referring to the curve in Fig. 2. In Fig. 2 the secondary output voltage is plotted versus the secondary load current for a typical "high reactance" transformer. It should be noted that as the load is increased, at first the output voltage decreases very slowly. However, as the load current approaches short-circuit, the output voltage decreases quickly. Actually, an ignition transformer operates between short circuit and open circuit, the voltage across the arc being dependent upon electrode spacing, air velocity, and condition of the electrodes.

In order to ignite the oil, it is necessary to provide an electrical spark of sufficient length and intensity. To develop the spark between the electrodes, through which the atomized oil must pass, an initial voltage of approximately 10,000 volts is required. However, once the arc has been established, the voltage necessary to maintain it is only in the order of 3000 volts. As stated above,

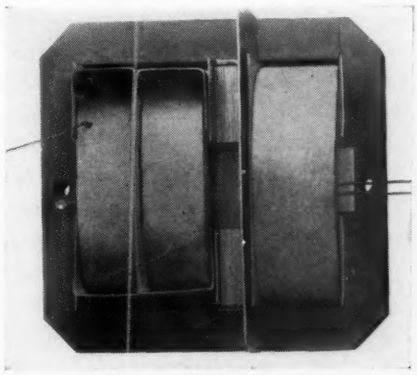

Fig. 3. *Typical construction of ignition transformer.*

the arc current would increase indefinitely if no external impedance were inserted in the electrical circuit. Thus, the ignition transformer must be designed to provide approximately 10,000 volts to strike the arc and also must have sufficient impedance to limit the current to the proper value after the arc has been established.

The photograph in Fig. 3 illustrates one typical construction of an ignition transformer. There are two secondary windings and one primary winding, with magnetic shunts placed between them. Two secondary windings are employed in order to reduce to a minimum the voltage stress to ground. Each secondary winding provides half of the secondary voltage and their series junction, or mid-point, is connected to ground

through the steel core. With this arrangement, the maximum voltage between the ends of the secondary windings and ground is only one-half of the total no-load secondary voltage. In addition, this secondary winding provides maximum freedom from interference produced by radio frequency oscillations generated in the arc. Shields placed between the primary and secondary windings practically eliminate the transfer of radio frequency interference energy through the transformer windings.

Although there are many other important considerations in the construction of a complete ignition transformer its main function is to provide sufficient voltage to break down the fuel-igniting arc and then to limit the current in that arc to the proper value. The cost of this device is so small that it has found general acceptance as the cheapest and most reliable instrument of fueloil ignition. In addition, late improvements, especially suppressing the transfer of radio frequency energy, are making better operation feasible.

American Locomotive Stops Making Coal Units

SMOKE, official bulletin, Smoke Prevention Association of America, Inc., Chicago 2, Ill., in its July issue, quotes an item gleaned from the National Coal Association Industry Bulletin, No. 2571, July 7, 1948. The item related a report from Schenectady, N. Y., to the effect that the American Locomotive Co. had turned out its last steam engine. All future units produced by the company will be diesel-electric locomotives.

New Oil Standard Effective September 25

FUELOILS, Commercial Standard CS12-48, a revision of the previous CS12-40, has been announced by the National Bureau of Standards as effective September 25. The new Standard had been circulated on May 10 for written acceptances and a sufficient number were received from a majority of oil producers, distributors, testing laboratories and users to warrant promulgation.

Mimeographed copies of the Standard are obtainable from The Bureau of Standards, Washington. Printed copies will be made available soon.

Details of the revised Standard are reproduced in the accompanying table.

TABLE I.—DETAILED REQUIREMENTS FOR FUEL OILS.[1]

Grade of Fuel Oil[2]		Flash Point, deg. Fahr.	Pour Point, deg. Fahr.	Water and Sediment, per cent by volume	Carbon Residue on 10 per cent Bottoms, per cent	Ash, per cent by weight	Distillation Temperatures, deg. Fahr.			Saybolt Viscosity, sec.				Kinematic Viscosity, centistokes				Gravity, deg. A.P.I.	Corrosion, Copper Strip, 3 hr. at 122 F.[4]
							10 per cent Point	90 per cent Point	End Point	Universal At 100 F.		Furol At 122 F.		At 100 F.		At 122 F.			
		Min.	Max.	Max.	Max.	Max.	Max.	Max.	Max.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Min.	
No. 1	A distillate oil intended for vaporizing pot-type burners and other burners requiring this grade of fuel	100 or legal	0	trace	0.15	...	420	...	625	...	...	...	...	2.2	1.4	...	...	35	pass
No. 2	A distillate oil for general purpose domestic heating for use in burners not requiring No. 1 fuel oil	100 or legal	20[3]	0.10	0.35	...	[5]	675	...	40	...	...	...	(4.3)	...	...	...	26	...
No. 4	An oil for burner installations not equipped with preheating facilities	130 or legal	20	0.50	...	0.10	...	...	...	125	45	...	...	(26.4)	(5.8)	...	...	...	...
No. 5	A residual-type oil for burner installation equipped with preheating facilities	130 or legal	...	1.00	...	0.10	...	...	...	...	150	40	...	...	(32.1)	(81)	...	....	...
No. 6	An oil for use in burners equipped with preheaters permitting a high-viscosity fuel	150	...	2.00[6]	...	...	...	...	...	...	...	300	45	...	...	(638)	(92)	...	...

[1] Recognizing the necessity for low-sulfur fuel oils used in connection with haet treatment, non-ferrous metal, glass and ceramic furnaces and other special uses, a sulfur requirement may be specified in accordance with the following table:

Grade of Fuel Oil	Sulfur, max., per cent
No. 1	0.5
No. 2	1.0
No. 4	no limit
No. 5	no limit
No. 6	no limit

Other sulfur limits may be specified only by mutual agreement between the purchaser and the seller.

[2] It is the intent of these classifications that failure to meet any requirement of a given grade does not automatically place an oil in the next lower grade unless in fact it meets all requirements of the lower grade.

[3] Lower or higher pour points may be specified whenever required by conditions of storage or use. However, these specifications shall not require a pour point lower than 0 F. under any conditions.

[4] The exposed copper strip shall show no gray or black deposit.

[5] The 10 per cent point may be specified at 440 F. maximum for use in other than atomizing burners.

[6] The amount of water by distillation plus the sediment by extraction shall not exceed 2.00 per cent. The amount of sediment by extraction shall not exceed 0.50 per cent. A reduction in quantity shall be made for all water and sediment in excess of 1.0 per cent.

Refractories for Oilheating

Purpose, Use, Properties, of Combustion Chamber Materials

by
Charles H. Burkhardt*

ONE OF THE MOST important conditions that must be complied with in order to obtain complete and clean combustion, is to burn the oil within the proper environment. In this case the term environment refers to the material surfaces surrounding the flame. These surfaces must facilitate the combustion reaction as much as possible. This is especially important at the beginning of each firing cycle, for it is at this time that the flame is at its lowest efficiency. The surrounding surfaces are cool, draft conditions are not balanced and the fire is constantly losing heat to the surfaces about it. Conditions of combustion at this initial stage are relatively unstable. Much depends at this point on oil burner design, especially concerning the oil-air mixture and the ratio of the amount of air to oil. Excess air at this stage can do great harm as its heat absorbing effect lowers the initial temperature of the fire making it much more difficult to achieve the temperature necessary to obtain clean combustion.

A burner with a poorly designed air delivery will be more dependent upon surrounding refractories and their design for clean starting, than will one with an excellent air delivery. In fact, burners are on the market today that attain clean and complete combustion so quickly that the ordinary refractory chamber is scarcely needed. Such burners can project their fires immediately against cold metallic surfaces with very little reduction in initial combustion efficiency. In such cases, refractory chambers mainly serve to protect those boiler surfaces that might be harmed by excess heat. This, however, is the exception rather than the rule, and domestic oilburners can be regarded as being strictly dependent upon an environment of refractory material in the form of a combustion chamber in order to achieve normal combustion efficiency.

Since an oilburner flame depends to such a large extent upon high surrounding temperatures for its efficient operation, it follows that the lower the running flame temperature the more important will be the function of the combustion chamber. With a small gallon per hour rate, we will have a smaller fire and consequently a lower temperature. This makes the low gallon ranges extremely critical with regard to environment temperatures, especially so at the start of the firing cycle. We can see, therefore, *that the refractory material for such small fires must be of the type that will absorb little heat from the fire and pass little of it to the outer surrounding surfaces.* If the refractory does this, the initial heat of the flame stays where it can do the most good, within the chamber itself, where it is radiated back upon the fire. Flame temperatures of these small, comparatively cool fires are thus raised and stable initial combustion conditions are quickly reached.

Properties of Insulating Brick

It can be seen from the foregoing that an insulating type fire brick is essential to clean starting combustion when the gallon per hour rate is low. This is extremely applicable to rates of 1.50 G. P. H. and lower. With an insulating type fire brick, the heat is held at the skin surface of the brick and the cellular structure of the brick prevents the passage of heat through it. This type of refractory material is porous and extremely light in weight and is composed of a multitude of tiny cells filled with air. These cells act as true insulators and efficiently retard the passage of heat through the brick. At the same time, they also serve the purpose of heavy fire brick inasmuch as they also refract or radiate heat back upon the flame itself thereby increasing combustion efficiency.

The use of insulating type fire brick is also important, not only in the small gallon per hour ranges but also where there is short on-off firing cycles. Such a firing cycle requires the use of an insulating type refractory. The short "on" periods demand a material that will heat quickly and hold the heat at the brick surface adjacent to the fire, so that stable combustion conditions can be quickly reached. Heavy type fire bricks cannot serve this purpose as they transmit heat through the entire brick and take too long to come to a heat balance with the adjacent flame. A wall composed of insulating type fire brick *4½ inches thick* will have the same insulating value as a heavy firebrick wall *18 inches thick*. This fact alone speaks volumes and demonstrates the aptitude of insulating brick where there are small, cool fires or intermittent short firing cycles. Actually this light weight type refractory material is quite strong and one of these bricks laid flat can support about three tons. Another important point concerning insulating type brick, is that its strength actually increases as the temperature increases up to its rated temperature limit, but not beyond.

It is important when using light weight brick to allow enough floor space in square inches per gallon of oil. About 90 to 100 square inches per gallon is adequate. This type brick should not be crowded against the flame as such impingement results in the destruction of surface cellular structure. It is not adaptable to long hard firing.

When To Use Heavy Brick

Heavy fire brick, which does not insulate but instead transmits heat, is best used when the firing cycle is constant and flame temperatures are high. Here its heavy duty nature stands up to the terrific abuse that can be occasioned by long burning, intensely hot flames. During an initial firing cycle, the heavy brick surface next to the flame will take much longer to heat to high temperatures due to the fact that it begins to pass the heat throughout its entire body and on to the boiler surfaces surrounding it. In cases where wet base boilers are used, this can be regarded as an advantage as

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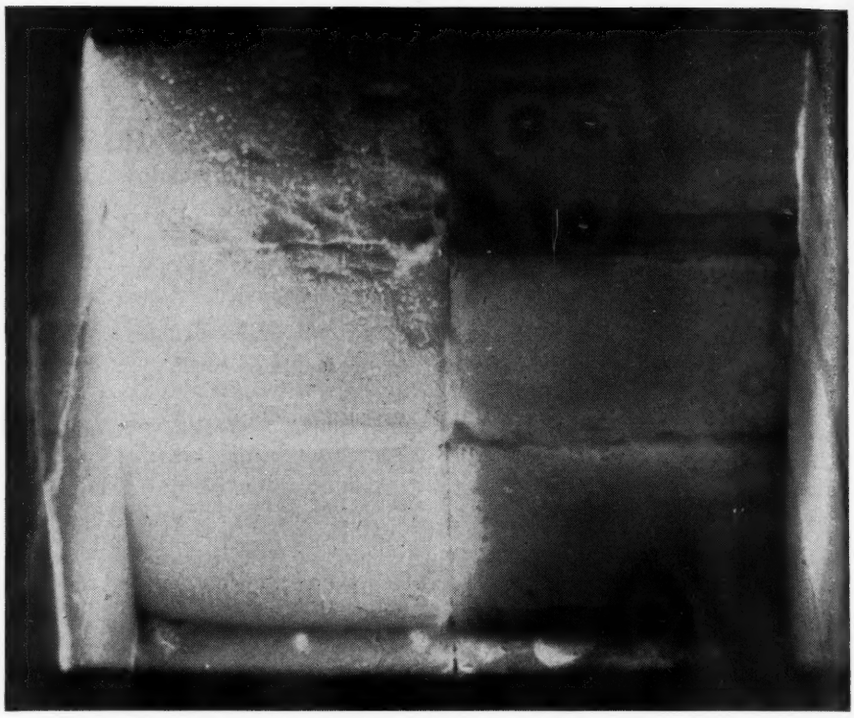
the boiler base will more quickly obtain heat and begin to set up a convection circulation. This circumstance counterbalances the brick's slowness in assisting in establishing balanced combustion temperature conditions, as does its ruggedness and ability to withstand extremely high temperatures for lengthy firing periods.

Since the destructive agent, with regard to firebrick, is heat and the surfaces exposed to heat break down first, it is important that the brick be laid properly. The seal of mortar between the bricks should be solid, compact and thin. The bricks in joining should be as close as possible. If there are thick joints the heat will penetrate them and the brick will be receiving heat on two surfaces rather than one. Thus the heat absorption of the refractory is increased to a large extent and it will break down more rapidly. It is sometimes regarded as good practice to dip heavy firebrick into the mortar mixed to a consistency to allow such a procedure. The consistency should be such that the brick will float on the mortar with about one inch of the brick protruding above the surface. This serves as a binder and helps prevent brick from working loose in a wall and holds in place any pieces that may break away. *However, this dipping should never take place with insulating firebrick*, as it defeats the bricks' very purpose. It fills the surface cells and destroys their insulating value, facilitating thereby the flow of heat away from the surface.

Firebrick is but one of many different type refractories. Besides plastics, there are castables, mortars, cements and various type coatings. Firebrick is manufactured from fireclays that are found in the natural state. Basically these clays are composed of aluminum and silicon compounds. Whether or not an alumina or silica type brick is used depends on the conditions under which it is fired, the type of fuel and its chemical nature. The type used for oilburner installations is made from a fine grade of fireclay composed of aluminum silicate. It should be relatively free from impurities as these are what cause unequal expansion under firing conditions.

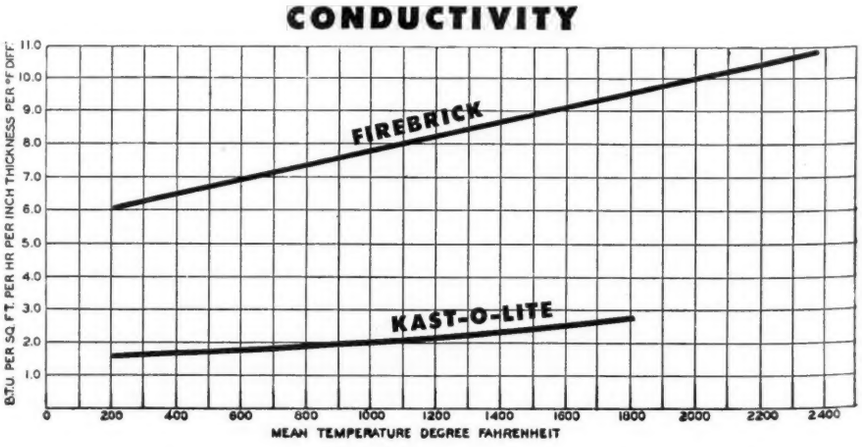
Firebrick should fulfill four basic conditions in order to stand up under adverse circumstances, such as heavy firing, impingement, etc. These are: permanent volume, resistance to spalling, slag resistance and ability to withstand temperatures for which it is rated.



Firebox, *the left portion of which is made of Johns-Manville insulating fire brick, the right portion of dense fire clay brick, photographed shortly after firing. Note the hot glow from the J-M brick, while the fire clay brick at right is still heating. The chamber was built as a test firebox, accounting for the fact that the brick are laid on end instead of flat.*

"Permanent volume" refers to the bricks' ability to avoid shrinkage. Brick that has a tendency to shrink will open the joints and is easily detected by observing the condition of the joinings. This quality is extremely important to the preservation of the structure of the chamber. Open joints are not always caused by brick shrinkage. There are times when this may be due to an inferior type of bonding mortar being used. This should be ascertained before condemning the firebrick.

The term "spalling" refers to the chipping, breaking away of pieces or shattering of the brick while under serv-



A chart *illustrating relative conductivity of heavy firebrick and insulating type castable refractory. (From A. P. Green Fire Brick Co. advertising manual.)*

ice in the combustion chamber. As the brick heats and cools, it expands and contracts due to these temperature changes. Any unequal expansion or contraction due to impurities in the clay used to make the brick causes stresses and strains to be set up which result in pieces or sections of the brick shattering and breaking away. This is perhaps the most common of the causes of brick failures in oilburning furnaces. To avoid this condition, firebrick with a low coefficient of thermal expansion should be used. Any expansion that does take place must be at a constant or uniform rate to prevent spalling. Heavy firebrick will have a greater tendency to spall when conditions of high flame temperatures and intermittent on-off firing cycles are present.

"Slagging" is a condition that does not occur to any extent with domestic oilburner installations. It refers to the erosion of firebrick caused by chemical reactions that take place between the brick and some other agent. This other agent may be the fuel, ash, molten slag or material used in some process. This slagging action quickly shortens the firebricks' life by eroding it very rapidly. These slags are absorbed by the brick, its fusion point is lowered thus hastening its breakdown. A brick's resistance to slagging depends on its chemical composition and the physical nature of its structure. The higher the fusion temperature, the more resistant a brick will be to either spalling or slagging. For this reason, it is wise to use firebrick of a higher temperature by several hundred degrees than is expected from the flame. This furnishes adequate protection against any type of refractory failure.

Hot load bearing ability refers to the pyrometric cone equivalent (P.C. E.) of the brick. This is the point or temperature at which the brick will begin to soften and it gives an index of the heat resistant qualities of the brick and the working temperature it will stand before softening. When the firebrick reaches a temperature at which it will soften under its own weight, it is referred to as the "fusion point." The fusion point of firebrick should not be confused with the "softening point." The term "softening point" refers to the point or temperature at which the brick *will begin to soften.* As fireclays are made up of fairly complex mineral compounds, these various compounds have different melting points. As the brick approaches its temperature limit, those compounds with the lowest melting point will fuse first, while the high temperature compounds composing the brick will remain unaffected. Although this softening point is considerably below the fusing point, it determines the "working range" of the brick. When this softening becomes excessive and excessive vitrification occurs, the working range of the brick has been reached even though it may still be many degrees below the fusion point. Thus in using firebrick, the fusion point should not be regarded as the temperature the brick will withstand. This is determined by the "working range" which is usually several hundred degrees lower than the fusion point. Two types of firebrick may have fusion points within fifty degrees of each other yet the difference in their working range may be 300 degrees. What determines this is the quality of the clays and their purity.

Just as good quality brick of the proper type is necessary to construct long lasting combustion chambers, so the chamber is just as good as the mortar that is used to bind it together. The same type bonding cement or mortar should not be used with insulating type brick as is used with heavy brick. Use the special type refractory cement that is furnished for light weight brick.

There are several important functions served by firebrick cement:

1. To act as a bond between the bricks without cracking, shrinking or expanding. This is best accomplished by an extremely thin layer of cement.

2. To vitrify and turn to heat resistant compounds while under fire and thereby establish a ceramic bond.

3. To prevent by its density the penetration of gases, vapors or flames.

4. To avoid breaking up upon repeated heating and cooling.

5. To have a high melting point; at least higher than the temperatures within the chamber.

Natural fireclays and prepared cements compose the bulk of bonding mortars. Fireclay is only suitable when temperatures are comparatively low and should be as close as possible to the chemical structure of the brick if it is to be used. It has little or no binding strength until the action of heat causes it to vitrify and turn to a glass-like compound, thereby establishing a bond. Although the shrinkage of fireclay may be as high as 10% to 12%, that of prepared bonding mortars is but from 2% to 4%. The fusion point of a cement should always be as high as that of the brick used, but the softening point at which initial vitrification occurs (developing of the ceramic bond) should be low so that its bonding power can be exerted throughout the joint.

Efficient oilburner operation is so closely bound up with this refractory environment that it cannot be neglected if good operating efficiencies are to be obtained. Many oilburner experts believe that firebrick acts as a catalyst in speeding up the chemical reactions in the burning fueloil. While there is little evidence to prove this contention of chemical catalysis, it is an established fact that firebrick is a physical catalyst furnishing and radiating heat to the flame and increasing its intensity. One has only to observe the initial firing period of a burner equipped with a .75 G.P.H. nozzle in a chamber of soft brick and one of hard brick. The cool fire produced by such a small nozzle reaches fairly good operating CO_2's eight to ten times faster with insulating brick than with heavy brick.

REFRACTORY DATA

1 Insulating firebrick (9" x 4½" x 2½")	1½ lbs.
1 Regular firebrick (9" x 4½" x 2½")	8.0 lbs.
1 Cubic foot of firebrick	140 lbs.
1000—9" firebrick occupy approx.	65 Cu. Ft.
1 Sq. ft. of 2½" thick firebrick wall requires	3.6 brick
1 Cubic foot of wall requires	17 bricks

Oddities in Servicing—I

In a Pinch, Service Experts Must Work on Design Problems

by
J. W. Schulz

HAVE you ever seen the factory representative of a heating equipment manufacturer lose his temper because some service man or installation man took it upon himself to improve a piece of new equipment?

Perhaps the man took off or put on something, thus altered the design of a brand-new, spic-and-span oilburner, or perhaps just a bit of hacksawing or drilling was involved.

Ordinarily of course, the oilburners shipped by a reputable, capable manufacturer need no design changes. The manufacturer, not the equipment dealer's man, should be the master at handling all problems related to equipment development, design, and improvement. A sensitive manufacturer can feel insulted by the inference that his equipment can be improved by dirty-hand, on-the-job mechanics. Leaving the factory, a burner is supposed to be so good that it can't be made better by Joe, up in Boston, drilling half-inch holes in it here or there, or by Willie of Chicago taking pieces of it to a machine shop for altering the way Willie points his finger.

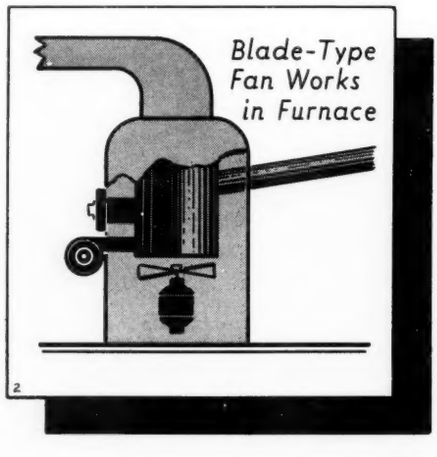
The factory representative is right about summoning his indignation when he can prove that the on-the-job changes cause poor performance. Often, field changes are poorly advised because the men who make them lack the knowledge and expensive, specialized equipment needed to check on the results of making the changes, and because it takes months for the disadvantages in the changes to make themselves apparent.

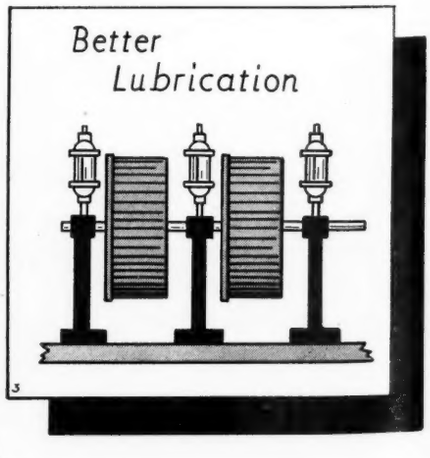
There's sense in the order which one experienced oilburner dealer gives his mechanics. Make no changes to the new equipment we receive, he orders his men, without first asking me about them. More than nine times out of ten, this dealer blocks the suggested improvements until he has discussed them in detail with well-qualified representatives of the manufacturers of the equipment. He adheres to this policy, the dealer emphasizes, because he makes certain of buying equipment only from the manufacturers who produce thoroughly-engineered, well-constructed equipment. Rarely, says the dealer, is such equipment made better by the application of monkey-wrench ideas.

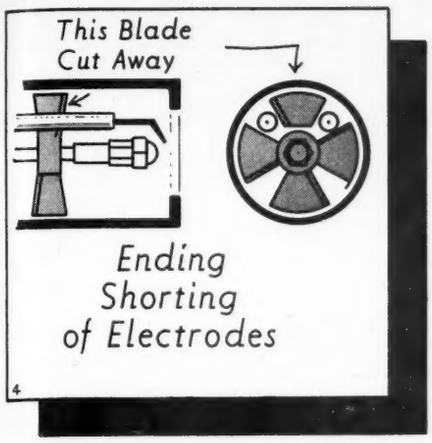
One burner dealer in suburban New York crystalized his ideas of field improvements made by service men some years ago, after a friend of the dealer's showed him the nozzle of a pressure burner which was improved on the job by drilling a big hole in it. Seemingly the service man employed by this dealer has reasoned that the frequent plugging of a nozzle can be ended by enlarging the nozzle's orifice.

A leading equipment manufacturer advances this argument against attempting to improve oilburning equipment through making basement-conceived changes to it. When it leaves the factory, the equipment is safe according to standards which deserve great respect. The organizations interested in safety frown on improvements thought up and made in basements by Tom, Dick, and Harry, who probably have little patience with the intricacies of engineering for maximum safety, and if basement changes are made freely, many will be made by men not qualified for design work.

The other side to the argument is that only well-qualified men should work at installing and servicing oilburners, and that in many actual instances broken-down equipment can be kept in operation only through a show of ingenuity on the part of the repair men. Alterations made to a burner in a basement may rate the unqualified commendation of the manufacturer of the equipment, and often do when the changes have been thought up and made in a thorough, shipshape fashion by a man truly expert at burner work. The changes may consist of adding to the burner expensive parts which, though admired by the burner manufacturer, are too costly to include in the production models of the burner. Again, the changes may provide for unusual installation or service conditions, or for safety of operation which is greater than usually is suitable. An expert at service work may of necessity think up a new arrangement in heating equipment which meets a particular







need, then find it necessary to alter new equipment somewhat to make it fit his idea of the new arrangement.

"There can't possibly be any harm in my re-designing for double ignition a burner model ordinarily made for single-ignition," argues a service manager, "especially when factory engineers examining the burner I altered agree that each of the two ignition systems I wound up with is more expensive and more dependable than the ignition system provided for the burner at the factory. Few engineers fail to understand my preference for double-ignition for gun burners which give exceptionally large fires, and the burner model I'm referring to is tops except that even in the large sizes it comes with single-ignition."

When, as this man does, you assume that basement-made improvements will rate the high approval of the factory engineers who designed the equipment to begin with, you spike many of the arguments against improving burners on-the-job. Where a service man can be certain that his work will be praised highly by factory engineers, he need not hesitate to improve equipment.

A service man able to do safe piping and wiring can't go wrong, for example, in adding a solenoid shut-off valve to a pressure burner which is new or old, even though in some cities a pressure burner equipped with such a shut-off valve still is an oddity. On a new installation, the solenoid valve may be added to the burner to provide quicker, sharper shut-off of the oil to the nozzle when the burner stops. This may end stopping pulsation difficult to end by any other method. On an old installation, the solenoid valve may be installed to offset a leak in the shut-off valve in the fuel unit and thus end dripping of oil from the nozzle when the burner is idle. Then the quick shut-off advantage is gained only incidentally.

One service man always keeps in his car a few solenoid shut-off valves suitable for up to 150 lbs. pressure, hence applicable to pressure burners. He also keeps on hand the assortment of pipe fittings and copper tube fittings which may be needed for speedy application of a solenoid valve to the nozzle line of any pressure burner, and the electrical cable and fittings needed to connect the valve in parallel with the burner motor.

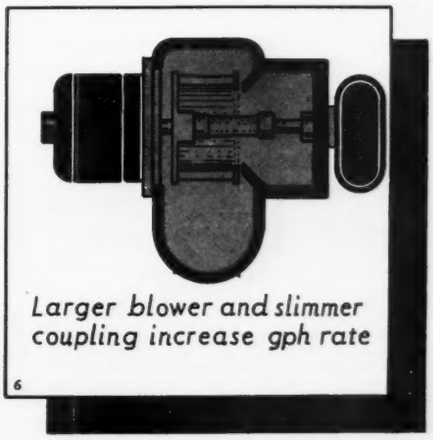
"When I encounter a burner with a fuel unit defective only in that the shut-off valve leaks," says this service man, "In 15-minutes I installed a solenoid shut-off valve. That settles the matter, for the burner is fixed and no call-back with new parts is needed. Applicable to all makes and models of pressure burners, this idea saves me lots of time and saves the burner owners lots of money."

Another unorthodox service idea was used by a man who found a burned-out motor in a small forced-circulation warm-air furnace. Spotting a powerful desk fan in the basement, he removed the air filters from the bottom of the furnace jacket and placed the desk fan there as the accompanying drawing shows. He thought of removing a few registers in the important rooms of the house to permit still easier circulation of air through the furnace system, but on trying out the heat found this unnecessary. For two weeks of mildly cold weather, the small house was heated properly by the blade-type desk fan.

"I had added confidence in the idea after I first thought of it," explains the man, "because I remembered that while according to engineering principles my under-the-seat car heater should have a centrifugal type blower wheel, actually it has a blade-type blower. Though theoretically it shouldn't, actually the car heater works beautifully. That proves to me that when the air-flow is easy and luck is with you, a blade-type fan can pinch-hit for the centrifugal blower which should be used."

The same man outlines how he reduced greatly the attention needed for the pillow blocks of a large furnace equipped with double blower wheels driven by a 1 hp motor. The many service calls received from the owner of the furnace at first seemed related to poor alignment of the three bearings of the blower shaft, and many hours went by as efforts were made to line up the bearings better. Then it dawned on the service man that the bearings were noisy only when not well oiled, and that filling the small oil cups on the pillow blocks quieted the bearings for only about a week.

Two on-the-job methods for improving the equipment were considered. First, 5/16" OD or larger copper tubes could be run from the pillow blocks to a location convenient for the owner to add oil once a week. This might insure frequent enough lubrication to keep the bearings quiet. It would eliminate the need to take half an hour, each time the bearings needed oiling; to remove and replace the covers of the inaccessible blower jacket. Second, the ordinary-size oil cups could be replaced with exceptionally large oil reservoirs which would hold enough semi-solid bearing lubricant to last perhaps six months. The second method was used finally. The accompanying drawing shows how 1¼" pipe nipples, 6" long and fitted top and bottom with reducing fittings for down to



⅛" IPT, were installed on the three pillow blocks. A grease-gun fitting at the top of each of the enlarged lubrication chambers facilitates giving a full charge of the semi-solid lubricant, which is bought at an automobile service station. The grease-gun stays on the installation. This on-the-job improvement makes for twice-a-year attention for the bearings instead of once-a-week attention. The blowers of this installation operate continuously throughout the heating season at an uncommonly high speed.

To end the short-circuiting of the electrodes of an old pressure burner while the owner took months to make up his mind about having the burner improved extensively or replacing it, a service man decided to keep the points clean of carbon by cutting away one of the four blades of the air-handling device in the gun tube of the burner. The service man declares he did not make before-and-after CO_2 tests to determine the effect on oil consumption, as the boiler was full of air leaks, the burner was an antique, and the firebox needed replacing. But cutting away the air blade between the electrodes did prevent lumps of carbon from forming on the electrodes, he says, and caused the burner to operate so dependably that the owner had to be guaranteed a 25% fuel savings before he would buy a new burner, properly installed with a modern firebox.

Drilling "Inside Air Holes"

Another instance of dirtying of the spark points was ended, after thorough on-the-job studies made with the help of a flame mirror and combustion testing instruments, by drilling air holes in the air-handling cylinder in the gun tube of the burner. The flame mirror showed that before these holes were drilled the flame tended to whip back to the nozzle when the burner was adjusted for CO_2 higher than 7%. Drilling six ⅜" holes at the location of the large arrows in the diagram ended the trouble in this case by providing for a definite, planned airflow past the nozzle and spark points toward the flame. Not one, but several makes and models of burners designed especially for cat-cracked oils need changes of this type, declares a dealer who services thousands of pressure burners of dozens of makes. Skill is needed to arrive at the proper location and sum-total area for the "inside-air holes," he emphasizes, since insufficient "inside-air" does not stop the ignition failure trouble of these burners, and needlessly excessive "inside-air" renders it impossible to adjust for clean combustion together with high CO_2 and quiet burning.

Inadequate Air Flow

With the figures garbled a bit to avoid identifying and embarrassing the burner manufacturer who is involved, one dealer's story about on-the-job improvements to a new burner model runs like this. The small warm-air furnaces in a certain housing project made up of 30 homes were fitted with exceedingly small pressure burners of brand-new design and supposed to be sized for exactly 1.0 gph. Soon after the units were fired, it appeared difficult to obtain enough air from the blowers for the 1.0 gph flames. With their air dampers wide open, the burners gave 12% CO_2, whereas 10% CO_2 was judged more nearly suitable, taking soot forming chances into consideration. After writing many letters to blower wheel manufacturers, the dealer informed the burner manufacturer that a wheel of ¾" greater diameter and ½" greater width could be obtained and would fit into the small burner. Though it was not the wheel for which the blower housing was engineered, the dealer said, the burner manufacturer had better try it out. Also, the dealer went on, the manufacturer had better try out an especially slim flexible drive coupling, since in this tiny burner the coupling the manufacturer was using seemed to block considerably the flow of air into the blower wheel. To give the actual figures for it, the air-flow tests made of the new parts by the burner manufacturer proved that the improvements outlined by the dealer increased the flow of air through the burner's gun tube by 28%, which was more than enough to eliminate the difficulties in firing the 30 warm-air furnaces. The dealer says he beat the burner manufacturer to the cure for the difficulties simply by being speedier and more thorough at obtaining information from manufacturers of blower wheels. However, the manufacturer's test laboratory was needed to obtain a numerical, dependable answer to the question of how much increase in the air output of the burner would be obtained through trying out the suggested improvements.

Instances in which installation and service men succeed in improving on manufacturers' equipment designs should not be taken to indicate that at the drop of a hat a mechanic should take a try at improving the design of the equipment he works on. An isolated instance proves nothing. In general, it is far best that equipment dealers make a policy of buying only highly-developed equipment which needs no design improvement in the field. Wise dealers report that this policy makes for maximum profits. Experimenting usually can not be done on a profitable basis by installation crews and service men.

Yet, without a doubt worthwhile improvements to equipment often originate in the minds of service experts, and many men servicing burners are sufficiently experienced and well informed to judge whether or not an idea will make for safe, dependable heating. To follow a course of sweet reasonableness and moderation, a practical man inflamed with a new idea about improving equipment does well to restrain himself if the circumstances permit. Before trying out the idea in the basements he visits, he should discuss it fully with the manufacturer of the equipment he proposes to improve.

(*to be continued*)

◈

W. Chalmers Burns has been elected president, Hartol Petroleum Corp., New York 20, N. Y., succeeding the late Raymond M. Parker, Jr. Mr. Burns, formerly president of Richfield Oil Corp. of New York, has been active in the petroleum business for almost thirty years and in 1926 helped organize the Walburn Petroleum Co. Subsequently this company merged with Acewood Petroleum Co. to become Richfield Oil Corp. of New York, with Mr. Burns its vice president, later, its president.

ANNOUNCING

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"DETROIT" CRC-533 For Rotary and Pressure Burners

Simple, quiet, and requires no maintenance. The "Detroit" CRC-533 Fuel Transfer Pump is built for continuous running at full capacity. Ideal for all rotary and domestic pressure type oil burners, it supplies a constant supply of fuel to the burners. Pump runs only during burner operation—is wired in parallel with burner motor. When used with burners requiring less fuel than supplied by the pump, a by-pass connection returns excess fuel to the tank.

Pumping unit is rotary vane type—quiet operation. Installation is simple, and servicing very easy. Has built in, easily cleaned secondary strainer.

This is a rugged and durable pump which will give years of trouble-free service. Its simple design and construction make possible a list price of only $27.50.

MODEL NO. 2
4 Gallons Per Hour

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Plans Near Completion For "Oil Progress Day", October 14

CELEBRATIONS IN A HOLIDAY MOOD are planned to mark the first "Oil Progress Day" on October 14. This is the day set aside by the Oil Industry Information Committee for the industry to tell its story to the public. Oil companies in all twelve OIIC districts of the country already have set specific schedules of events to mark the day.

All twelve OIIC Districts have approved plans for the day which has been set aside for oil companies to tell the story of oil's progress and its contribution to communities and the nation. Large and small companies, trade associations, and companies in related fields have expressed their intention of participating actively in the observance of "Oil Progress Day." Among the scheduled events are "open house" at refineries, pipe line terminals and stations.

Several large companies will devote newspaper and outdoor advertising throughout their entire marketing areas to that day. Other companies plan special exhibits in their communities.

Stimulated by committee action, there will be special addresses by oil men before civic and other organizations, in schools and over the radio to tell the progress story. Some trade associations are devoting their entire publications to oil's progress.

The Oil Industry Information Committee will support "Oil Progress Day" on October 14th with advertising in the oil trade press, national media, newspapers and radio trade press, it was announced recently. The OIIC also will supply layouts and copy for tie-in advertisements for newspapers and radio that can be utilized by local oil men.

In addition, finished art work of a dramatic design which oil companies can reproduce as posters, "A" board copy, banners, stickers and pump hangers for "Oil Progress Day," will be supplied.

Quarter-page "teaser" ads pointing to October 14th as "Oil Progress Day," and separate full page "announcement" and "merchandising" ads showing oil men the advantages of participating in the industry's report to the communities of America, and telling how oil men can tie in with this activity, are scheduled for insertion in 35 oil trade publications.

On October 14th there will be ads in the *Wall Street Journal, New York Journal of Commerce* and *Chicago Journal of Commerce*.

The consumer advertising will appear in "Colliers," "Look," "Life," "Saturday Evening Post," "Pathfinder," "American Weekly" and "This Week," and will be keyed to the reports that oil men will make to their friends and neighbors at the community level on the competitive, progressive nature of the oil industry and its 34,000 companies.

A special booklet explaining the advantages of local advertising tied to the national campaign and to "Oil Progress Day" events will be distributed to local oil men through District Oil Industry Information Committees.

REAL DEALER PROFIT! CONSUMER SATISFACTION!

EASILY INSTALLED ON PREMISES!

NO MOVING PARTS OR ADJUSTMENTS!

FITS ANY GUN-TYPE BURNER!

Manufacturers of nationally known oil burners have adopted the Sanborn Combustion Head as standard equipment.

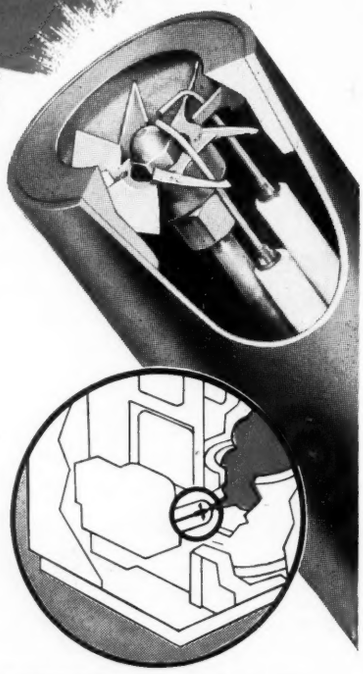
SANBORN COMBUSTION HEAD

SAVES UP TO 30% ON FUEL OIL

BURNS CATALYTIC FUEL OIL CLEANLY AND COMPLETELY

Scientifically and thoroughly mixes air with atomized oil . . . produces perfect carburetion and complete combustion, resulting in a hotter, more efficient fire.

- Raises CO_2 up to 14½%
- Reduces high stack temperatures
- Does not reduce burner capacity
- Raises fire box temperature 300 to 500 degrees



Manufacturer, distributor and dealer inquiries invited.

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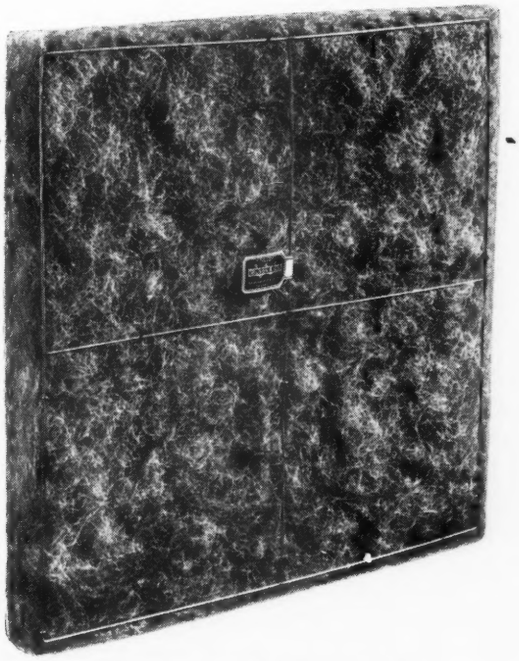
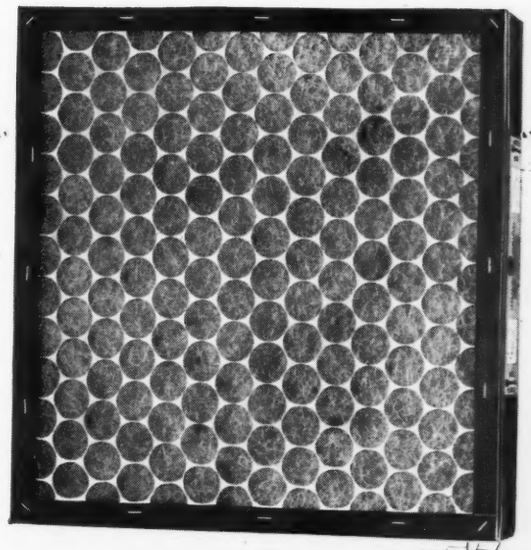
TWO TYPES OF HAIR FILTERS





The "EDGESEAL" HAIR FILTER

The original Hair Filter with the patented self-sealing edge—for BUSINESS and INDUSTRY.

The "HONEYCOMB" HAIR FILTER

The "dressed-up" Wilson's Hair Filter—clean, trim-looking, easy to install—for HOMES.

Note: Clip this out and keep handy to assist you when ordering

Both are HAIR FILTERS

These two Wilson's Hair Filters provide the same efficient filtering action. Both are hair filters. Both do the thorough job of filtering that natural hair alone can do . . . with a maximum of free air-flow throughout the life of the filters. But remember—the trim-looking, dressed up "Honeycomb" type is for HOMES. The original patented "Edgeseal" type is for INDUSTRY. *BOTH ARE HAIR FILTERS.*

Ride along with a winner.

Send for FREE sample with details and prices.

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fuel oil & oil heat

Fuel for Your Future

A Suggested Speech for Oilheating Men before Local Groups

IN THE UNITED STATES, any commodity, product, or service is just as important as public preference makes it. At this time there are more than 3.7 million power driven oil burners and over 5 million oil burning space heaters installed in American homes. Their total is far greater than the *combined* gas burner and stoker total.

As an industry, oil heat is about 28 years old. At the end of its first year (1920), there were only 12,500 power driven oil heating installations.

Never in all of its pre-war history, however, did oil heat even approach its postwar popularity. Wartime surveys, for instance, indicated that in 1946, 1947 and the first 6 months of 1948, power driven oil burner sales would total 1,055,000 and space heaters about 1.7 millions. Actually, however, in these 2½ years, the oil burner industry has sold and installed *1,550,000* power driven oil burners and an estimated 2.8 *million* space heaters! Predicted sales: 2,755,000. Actual sales close to 4,350,000.

Let's get the full significance of this latter figure. *Actual* sales these past 2½ years, have exceeded *predicted* sales by nearly *1,590,000* oil burners and space heaters. In fact, at its 1941 rate (the industry's best pre-war year), it would have taken 33 months to sell the 880,000 power driven burners that the industry sold in only *12* months last year. *That*, ladies and gentlemen, is automatic heat's greatest success story. *That* is sensational growth. And—like all sensational growth—has been accompanied by growing pains. Which brings us to last winter and last winter's widely publicized fuel oil situation.

Despite the fact that only a small percentage of oil heat users in the United States were short of oil at any given time and for any period of time, the headlines screamed of oil shortage. After all, a newspaper isn't going to gloss over *anything* that is tied-in with the comfort, health, and general well-being in millions of American homes. Translated into individuals (only 3 to a family), you have *26 million* Americans depending upon oil heat. Twenty-six million happens to be a lot of people . . . a lot of newspaper readers. Yes . . . and a lot of votes.

Why, you may ask, were even a small percentage of oil heat users short of fuel for even short periods of time last winter? Open confession, they say, is good for the soul. Frankly, we all missed the boat in attempting to guess how many Americans would buy oil burners in 1947. The oil heat industry missed the boat. The oil industry missed the boat. Yes . . . and the government missed the boat! Nobody even dreamed that 1947 oil burner installations would be nearly *double* those of 1946. Bad guessing along with steel shortages which certainly prevented rapid expansion of oil transportation and storage facilities, all added up to confusion and consumer inconvenience.

Then we began to hear suggestions from certain quarters that the manufacture and sale of oil burners be stopped entirely. In other words, when a baby cries for milk and there doesn't happen to be any in the bottle at the moment . . . kill the baby.

Just about the time, however, that the fog looked thickest and public fear about the fuel oil supply almost equaled that when Orson Welles' men from Mars drove some of us to the hills, two industries decided to try some teamwork. A typical American move . . . and always a good one.

Leaders of the oil and oil heat industries sat down and discussed the situation . . . and what to do about it. "Let's tell the public the facts about the fuel oil supply," said these leaders. "And let's not sidestep the fact some people were without oil at times this winter."

First of all, the oil industry scrapped the negative approach to the fuel oil situation. Early this summer, the Oil Industry Information Committee (representing 34,000 individual oil companies) adopted this official outlook on the nation's oil supply (quote): "It is *expected* that the nation's overall supply of oil products will meet the overall needs of present consumers as well as provide for a reasonable increase in oil consuming equipment." (end of quote)

In making this quote, I deliberately emphasized the word "expected." That was as far as some oil producers wanted to go. Today, even the more timid admit that these *expectations* were conservative.

As a result, current Oil Industry Information Committee ads (in October issues of the "Post," "Life," "Collier's," and "Look") use this positive statement (quote): "The nation's oil needs *are being met*. What's more, the industry is gearing itself to meet the even *greater* needs anticipated for tomorrow. For the all-out job to supply you *today* has resulted in the largest stock of underground oil reserves in the history of the nation!" (end of quote)

Yes . . . the news is good. And the

This speech was written by Lon Casler, public relations counsel for the Oil Heat Institute, and originally was intended as a guide for those who were to talk before local groups during the week of October 14, "Oil Progress Day."

There is no reason why publicity favorable to the oilheating industry should be confined to a single day or a single week. Program chairmen of thousands of local clubs and civic organizations constantly are searching for speakers who can inform members on various phases of national as well as local affairs. A man who volunteers to talk usually can get a date before one or more groups. That is an opportunity to give accurate information to those people who are most likely to become customers.

It is suggested that this speech be used as a guide, or it can be used exactly as it appears. It should be copied, double or triple spaced for easy reading, and words, figures and phrases in italics should be underlined for emphasis.

TANKS

Fuel Oil Storage

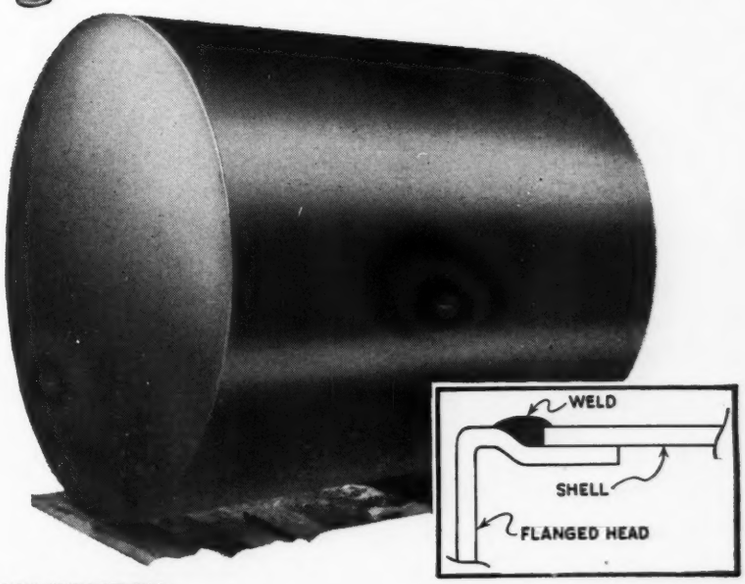
AVAILABLE FOR DELIVERY

BASEMENT TANKS

Obround construction, 14 gauge black steel. Capacity, 275 gallons, yet built so that it can be easily carried through standard doorways. Constructed to Underwriters' Laboratory Specifications.

UNDERGROUND TANKS

New plant equipment enables B S & B to produce top-quality Underground Tanks up to 12 feet in diameter with assembly-line speed. Exclusive head-and-shell joint gives *extra* strength, *extra* protection against leaks. Available in a variety of sizes and capacities.



WRITE TODAY! Tanks are in production. Ask for prices, delivery information, specification sheets. Address Special Products Division, Black, Sivalls & Bryson, Inc., Power and Light Building, Kansas City 6, Mo.

EFFICIENCY RELIABILITY

FOREIGN INQUIRIES INVITED Cable Address: BLACK, KANSAS CITY, U.S.A.

BLACK, SIVALLS & BRYSON, INC.

KANSAS CITY, MO. OKLAHOMA CITY, OKLA.

news is *official!* Words, alone, cannot change a picture. There can be but one explanation of the change in the fuel oil outlook. A *great* industry has done and is doing a *great* job.

Right now the nation's 34,000 individual oil companies are supplying you with almost 250 million gallons of oil products every day. This is more oil than has ever been supplied before . . . more oil than was needed in the peak years of the war!

The demand for oil is constantly expanding because of the ever-increasing number of cars and trucks . . . farm tractors and oil burners . . . planes, trains, ships, and factories.

This increasing demand for petroleum products can and will be met by an industry attuned to a philosophy of plenty, an economy of abundance.

To handle this job, the petroleum industry has invested some $20 billion in oil fields and refineries; in all of the other facilities necessary to refine and store its products.

More than 2,200 new companies have entered the industry as oil producers during the last three years and 1,300 firms have entered the marketing end of the business in the last year.

Since pre-war 1941, the oil industry has increased the volume of its products delivered to consumers at a rate twice the average of all industry.

From the original "pot stills" which produced kerosene in the early days, the industry has expanded and improved its refining facilities so that today more than 1,200 products are made from crude oil.

To meet the ever-rising and unprecedented demands for products and services, the industry is engaged in expanding facilities in all operations. This calls for an investment of $4 billion in 1947 and 1948.

More than one hundred million dollars is spent annually by the oil industry in research to develop new techniques, to improve quality, to make maximum use of oil produced and to provide new uses for oil to meet anticipated public needs. Fifteen thousand workers are employed in research activities alone.

Certainly this is more than a mere recitation of figures. This tremendous investment in money and manpower by a great industry is a vote of confidence in you. You who represent the overwhelming public preference which makes it necessary to produce petroleum products in such quantities.

Oil and oil heat—the All-American team—are going to continue to serve you. One to produce, refine, and deliver the fuel of abundance. The other to design, build, install, and service its equipment so that you will enjoy "More heat per dollar . . . fewer gallons per season."

There was a day when fuel oil was regarded as a practically worthless by-product. That was when the oil companies wondered what in the world to do with the oceans of fuel oil which remained after gasoline and kerosene had been taken from the crude oil.

Just about the time the oil companies were wondering what to do with the fuel oil on their hands, some of you may remember that you could go into the butcher shop and get a soup bone free . . . along with some liver for the dog or cat. Times change, however. Today, the soup bone, the liver, and the fuel

(*Continued on page 128*)

HERE'S A *Profitable*
QUICK-SELLING PACKAGE HEATING UNIT
The Bethlehem
DYNATHERM

Sells Better because it Performs Better!

Made by a company which looks back on 117 years of engineering experience in the field of heat transfer and heat production. Because the Bethlehem Dynatherm is built by a manufacturer with a fine quality reputation to uphold—you can be sure of its durability, dependability and economy.

A few exclusive Bethlehem Dynatherm territory Franchises are still available
Wire or write immediately for full information.

THE BETHLEHEM FOUNDRY & MACHINE COMPANY
BETHLEHEM, PENNSYLVANIA

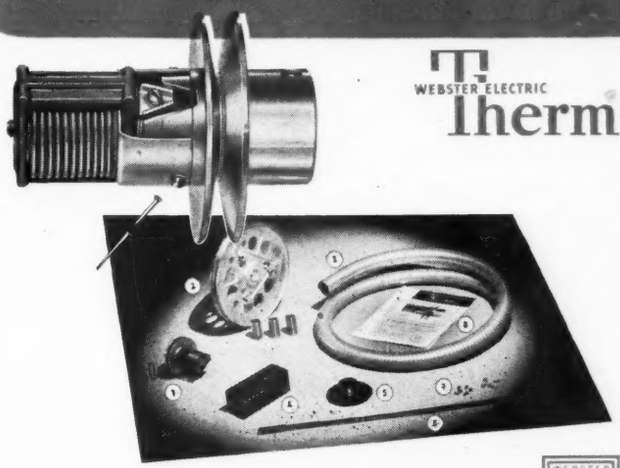
WEBSTER ELECTRIC Fuel Units and Transformers

build product reputation for you!

When vital parts of your equipment are top quality . . . dependable . . . and long lived, your product will maintain a top quality position. That's why it pays to remove all guesswork and install Webster Electric Fuel Units. By reputation . . . by long experience . . . by performance . . . here is a fuel unit you can depend upon. Refinements in design of the duplex regulating valve give a positive cut-off with steady maintenance of pressure. The two-stage unit design with return line continuously purges small air leaks without affecting pressure.

Webster Electric Fuel Units are also manufactured in Canada by Canadian Acme Screw and Gear, Ltd., Toronto, Canada.

A Webster Electric Transformer insures positive ignition of cold oil, even when line voltages are low. They incorporate the latest developments for effective elimination of radio interference. Mica insulation protecting high voltage coils does not lose efficiency with age. It is with built-in quality like this that you can protect your product . . . so that you have top performance. Webster quality is top quality . . . therefore we urge you to use Webster Electric products and obtain the advantages of their outstanding performance. For further information write to Webster Electric Company, Racine, Wisconsin.



WEBSTER ELECTRIC **Thermodrive** **is now available with complete kit for easy installation**

Thermodrive performance advances the principles of the C.A.C. program, as it provides continuous low-speed blower operation between burner cycles when required, and in addition gives increased circulation during periods of burner operation. At all times, Thermodrive automatically controls the rate of circulation in exact coordination with heat output of the furnace.

Thermodrive can be easily installed with a very short period of shutdown, making it suitable to sell the year around.

Investigate this unusual product for its many advantages on existing and new forced air installation. Write for Thermodrive bulletins.

WEBSTER ELECTRIC

RACINE WISCONSIN

Established 1909

Export Dept. 13 E. 40th Street, New York (16), N. Y. Cable Address "ARLAB" New York City

"Where Quality is a Responsibility and Fair Dealing an Obligation"

Oil Industry Spokesmen See Fuel Supply Easing

OIL INDUSTRY EXECUTIVES in various appearances around the country during the last month have generally agreed that the oil supply picture is easing, and that no serious shortage is contemplated. Predictions are based on the supposition that no serious refinery or transportation shut-down will occur during the heating season immediately ahead.

Addressing the 8th Annual Fall Meeting of the Empire State Petroleum Association at Buffalo, R. M. Bartlett, vice-president of Gulf Oil Corporation, predicted that the oil industry would be able to meet the demand. At the same time he appealed for the fullest industry cooperation to avoid any serious supply problems. Mr. Bartlett cited progress made in expanding refinery and storage facilities for petroleum products since last winter. He stated that "The supply picture is undoubtedly rosier," but warned that: "any refiner, jobber, or dealer, large or small, is inviting trouble if he sells more oil than he has in sight, and depends on luck to carry him through."

Of the three oil products used for heating, Mr. Bartlett asserted that kerosene is likely to be the most troublesome. He declared:

"Recent statistics shown to me indicated that stocks (of kerosene) east of the Rockies were about 14 per cent above a year ago, and certainly that is encouraging.

"But many new space heaters have been installed and frequently people who use kerosene are dependent on it not only for heat but for cooking and lighting as well."

Kerosene consumption, he pointed out, is about five times heavier in winter than in summer. Also, refineries have little flexibility in switching yields to kerosene. He admonished his oil industry audience:

"I, therefore, want to urge you not to sell yourself short on this product, hoping for a miracle to pull you out in the middle of winter. This necessitates stock piling to the limit."

Distillate fuels, Mr. Bartlett said, present a better picture. Last winter's experience showed that distillate output could be increased to meet emergencies by swinging refinery yields. With gasoline stocks at a comfortable level, refineries can increase their yields of distillate earlier this year if necessary.

Recent figures showed that distillate stocks were better than 27 per cent ahead of last year, he reported. However, this is less of a gain than it appears, since last year's stocks were admittedly too low; and present domestic demand is up about 13 per cent.

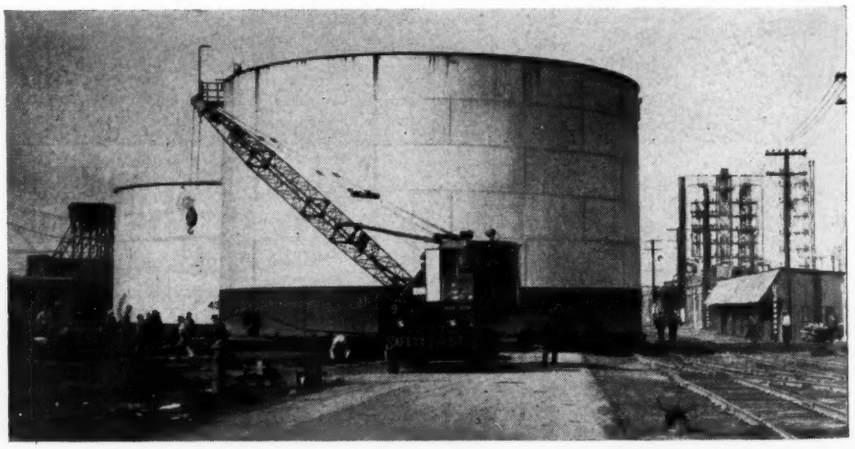
Residual fuel stocks are also up—by 17 per cent at midsummer. Difficulty here has been encountered in finding storage for this record production. But summer stockpiling and increased refinery runs should make sufficient residual fuel available through the winter, if conservatively handled.

John W. Boatwright, Standard Oil (Indiana), speaking before the Michigan Petroleum Association, September 14, indicated that the Middle West was in a much sounder position to meet increased demand than a year ago, and cited four factors that have contributed to an improved national supply picture:

"1. The oil industry to date in 1948 has achieved an expansion of supplies of 9.5% as compared with an estimated increase of demand of 7%. The industry was able to restore stocks of crude and products through June this year at a rate of 127,000 b/d. Perhaps the principal contributing factor to the improved domestic picture is the shift of the import-export balance which in 1947 saw exports exceed imports by 13,300 b/d, while through June this year the pendulum has shifted the other way and imports have exceeded exports by 117,000 b/d.

"2. The transportation situation on petroleum products has been appreciably corrected in the past 12 months. Substantial additional pipe line capacity has been completed. Tankers are in surplus supply at present. Tank cars last year were extremely tight, while today no particular problem exists. Barges, although increased in total capacity, have remained relatively tight throughout the current year because of the increased movement to up-river destinations. In summary, I believe it safe to conclude that adequate facilities exist for moving petroleum supplies from any point in the nation to any other part of the market.

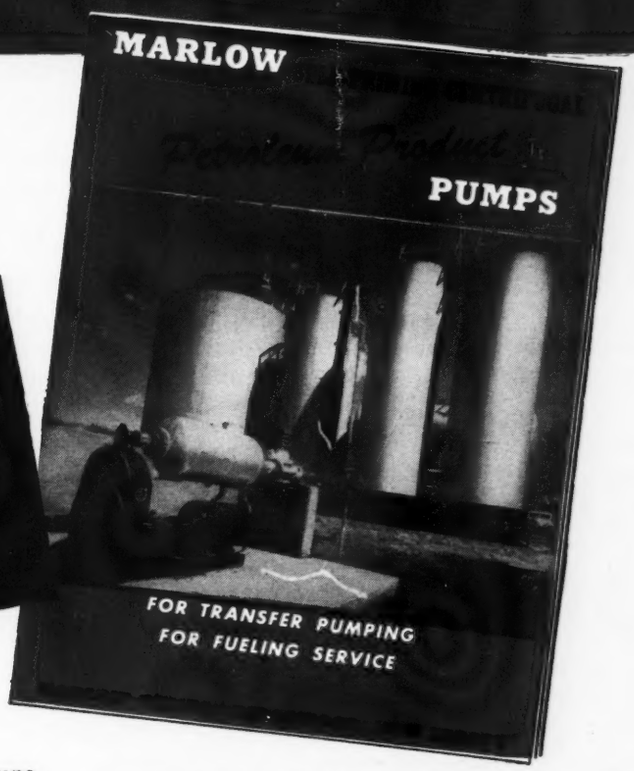
"3. Refinery capacity of the industry



An oil storage tank, *with a capacity of 720,000 gallons and weighing 184,000 pounds, takes to 6" steel rollers for a fast move to a new site at the Bayway refinery, Esso Standard Oil Company, Linden, N. J. As part of an overall expansion and modernization program for the Company's refineries the tank is being moved to make way for a larger tank-truck loading rack. Ordinarily, storage tanks are moved by floating or by dismantling each tank plate by plate and reassembling on the new site, a process requiring about 30 days. By using the method shown above this huge tank is rolled bodily by crane and bulldozer to a new location in approximately three days.*

MARLOW PUMPS DO MORE...

THIS NEW CATALOG TELLS HOW AND WHY



Describes in detail the revolutionary Marlow pumps which successfully combine the efficiencies of centrifugal pumping with positive self-priming action . . . pumps which are so simple in action that only one part, the impeller, moves the liquid and which have no auxiliary mechanisms.

Increasingly, Marlows are being used instead of positive displacement pumps to handle petroleum products with viscosities up to 500 SSU. Quietly and dependably, they pump to and from tanks either above or below ground. Automatically, they purge themselves of air and vapor. They will not vapor lock.

Furthermore, Marlows continue to pump at high efficiency even after long, hard use. Their efficiency does not depend on delicate clearances and they are virtually unaffected by the abrasion of tank scale, welding shot or other solids so destructive to rotary pumps.

If your business requires the handling of petroleum products, it should interest you to know all about this modern way of pumping. Send for your copy of "Marlow Petroleum Product Pumps" today.

TELLS WHY ONLY A MARLOW OFFERS ALL THESE ADVANTAGES... AND MORE

- ***Self-priming on suction lifts***
- ***Centrifugal action—quiet, efficient***
- ***Marlow self-compensating shaft seal***
- ***Higher capacity for size***
- ***No by-pass or pressure-relief valves***
- ***Long life and low maintenance***
- ***Continued high capacity at low initial cost***

MARLOW PUMPS
Ridgewood, N. J.

Please mail me a copy of MARLOW PETROLEUM PRODUCT PUMPS.

NAME .....

FIRM .....

STREET .....

CITY ..... STATE .....

MARLOW PUMPS • RIDGEWOOD, NEW JERSEY

was ample throughout the tight supply situation in 1947 and early 1948. As crude supplies have mounted more rapidly than refinery expansion has been achieved, the industry is more nearly approaching the capacity of its refineries. This was to be expected. The industry's first responsibility was to devote its capital and its resources to the exploration and development of additional crude supplies. As the industry approaches that goal, I believe it an inevitable conclusion that additional refinery capacity will be brought into existence to meet requirements.

"4. Estimated demand for petroleum products on a national basis will continue upward at approximately 7% over last winter during the forthcoming six-month period. The major uncertainty concerning demand is the requirements of the armed services. I know and you know that the petroleum industry has met every national security requirement placed upon it through two world wars and will continue to meet that responsibility. Occasionally, rough spots will be encountered if military demand assumes proportions that necessitate a shift to military specifications."

Eugene Holman, president of Standard Oil (N. J.), speaking at the meeting of the National Petroleum Association at Atlantic City, September 16, warned that coal must return to its historic place as the chief source of energy, since oil and gas cannot continue to supply the increasing energy demand. He cited the fact that coal, at the end of the first World War supplied 76 per cent of the world's energy. Today oil and gas supply more of this nation's energy than coal.

R. J. S. Pigott, Gulf Oil research and development engineer, told the National Petroleum Association that estimates of petroleum reserves are based on fallacious theories. He indicated that present reserves indicate a pessimistic minimum supply of twenty to twenty-five years and a maximum of forty to fifty years, and nobody can pin it down any closer. He asked that new sources of energy he found within the next ten to twenty years to supplement the present known fuels.

Max Ball, chief of the Oil & Gas Division of the Interior Department, was quoted in New York papers September 20, as saying that prospects for a winter without a fuel shortage are "excellent." He said that next winter would have to be "even more severe" than last winter along the Atlantic Seaboard to suffer a shortage. The next day he was quoted as warning that the Pacific Coast oil strike, which began on September 3, has caused a drop of about 60,000 barrels a day of distillates which could not be made up even if the refineries were opened immediately. He warned that the strike may affect fuel supplies over the entire country.

"Anything such as having to send extra supplies to the West Coast," Mr. Ball said, "a winter worse than last year, curtailment of overseas supplies, strikes and major disaster, or an unexpected increase in military demand could throw that balance the wrong way."

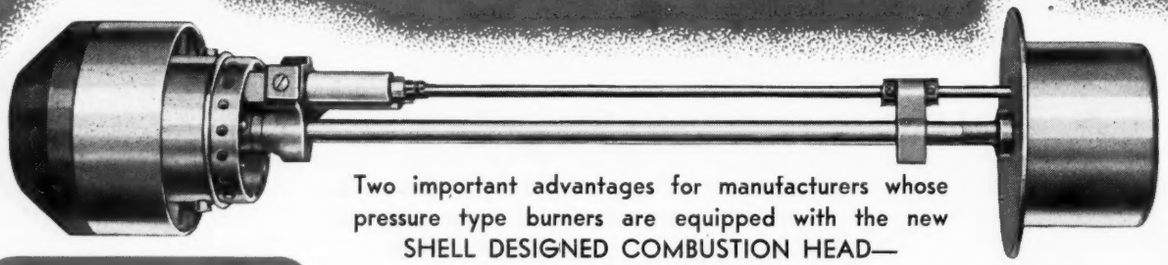
◈

Frank J. Smith has succeeded *Harold D. Bates* as advertising and sales promotion manager, Philip Carey Mfg. Co., Cincinnati, Ohio. Mr. Bates was promoted to general merchandise manager.

Now Available!

NEW COMBUSTION HEAD

DESIGNED AND PATENTED BY THE SHELL DEVELOPMENT CO.



Two important advantages for manufacturers whose pressure type burners are equipped with the new SHELL DESIGNED COMBUSTION HEAD—

1 Economy of fuel. Field tests indicate 20% and more oil saving. A CO_2 as high as 15% is obtainable with no smoke, even when using 100% catalytic fuel oil. The oil situation makes such economy a positive necessity, and the CUSTOMER SATISFACTION produced is a real SALES PROMOTER.

Replacement of obsolete, inefficient burners by burners equipped with the NEW SHELL DESIGNED COMBUSTION HEAD will be quickly paid for out of oil savings!

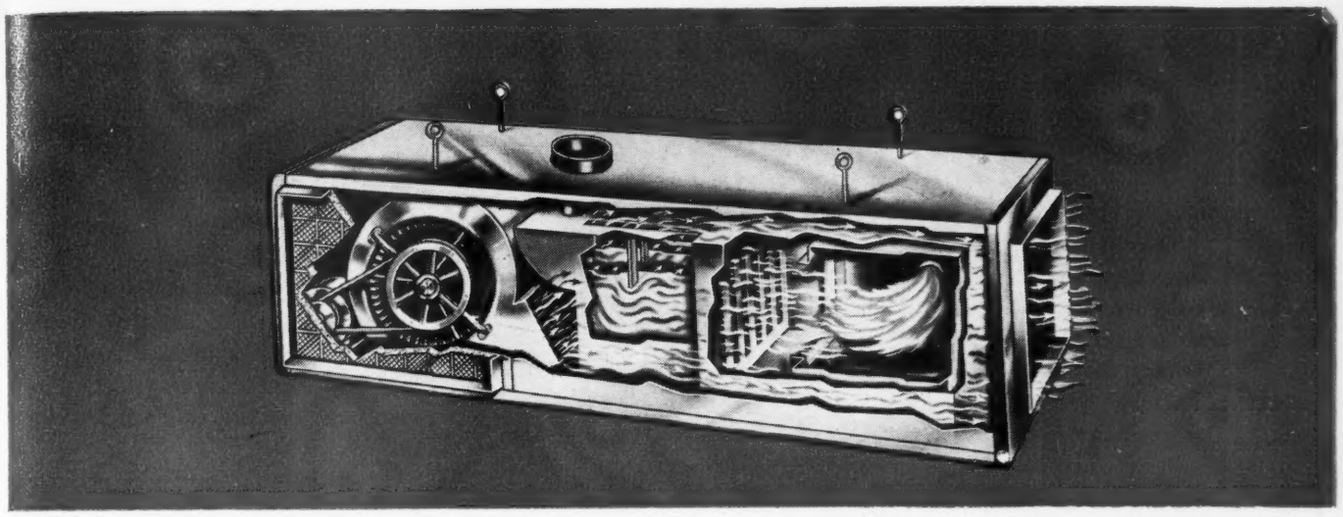
WE SOLICIT INQUIRIES FROM MANUFACTURERS OF OIL BURNERS

Manufactured by

MODERN DIE AND MACHINE COMPANY

166 PLEASANT STREET, BOSTON 25, MASS.

Under license from the Shell Development Company



THE MODERN WAY TO HEAT SMALL BUILDINGS INEXPENSIVELY. Suspended by 4 steel eye-bolt hangers. Completely out of way. Permits full utilization of every inch of valuable floor space. Employs counter-flow principle of heat transfer (pictured above), moving hot combustion gases opposite to flow of heating air. This means greater efficiency at lower cost. Has double inlet centrifugal type blower, dynamically balanced for smooth powerful operation. Resilient mountings assure *quiet* blower action.

NOW—A NEW, HIGH-EFFICIENCY OIL-FIRED SUSPENDED FURNACE

packaged at the factory for minimum installation cost!

For: Service Stations, Garages, Stores and Small Buildings. In 1946 GILBARCO introduced the revolutionary ECONOMY CLUTCH—most important oil burner development in 25 years. Now, in our 82nd year of manufacturing equipment for the petroleum industry—Gilbert & Barker announces a brand-new heating unit for service stations, garages, stores and small buildings.

Easy to install: Completely assembled and wired at the factory. The burner is already mounted and all that is necessary is to put unit in place, install oil piping and carry wiring to the thermostat.

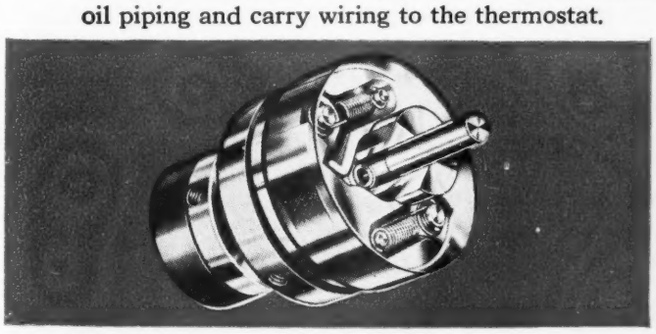
Saves on operating costs: Utilizing the counter-flow principle of heat transfer, hot combustion gases and heated air move in opposite directions. This, plus the exclusive Economy Clutch, means highly economical operation, lower fuel bills.

Some dealer territories are still open west of the Alleghenies. Write for complete information.

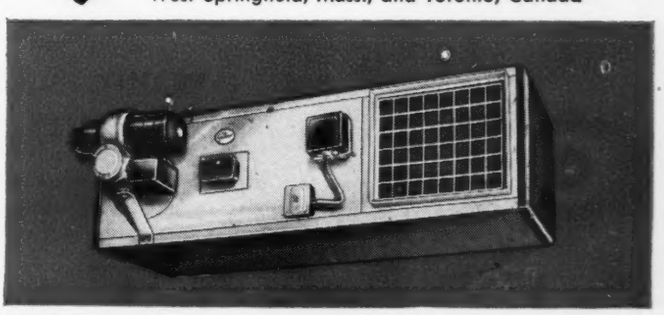
Gilbarco

THE OIL BURNER WITH THE PATENTED ECONOMY CLUTCH ACTION

Gilbert & Barker Mfg. Company
West Springfield, Mass., and Toronto, Canada



THE EXCLUSIVE ECONOMY CLUTCH. This famous Gilbarco fuel-saving feature reduces heat-wasting soot by starting burner fan *before* combustion and continuing fan operation several seconds *after* combustion has ceased. This patented action *actually gives more heat per gallon.*



REAR VIEW SHOWS BURNER AND CONTROLS. Easily accessible for inspection and cleaning. Cold air drawn through two large viscous coated filters. Powerful blower forces air over remarkably efficient heating unit . . . spreads clean, heated air evenly into every part of space to be heated.

plants where consumption is not greater than 50 tons a year, but in actual practice such installations have to be approved by the Ministry of Fuel and Power before an allocation of fueloil is granted.

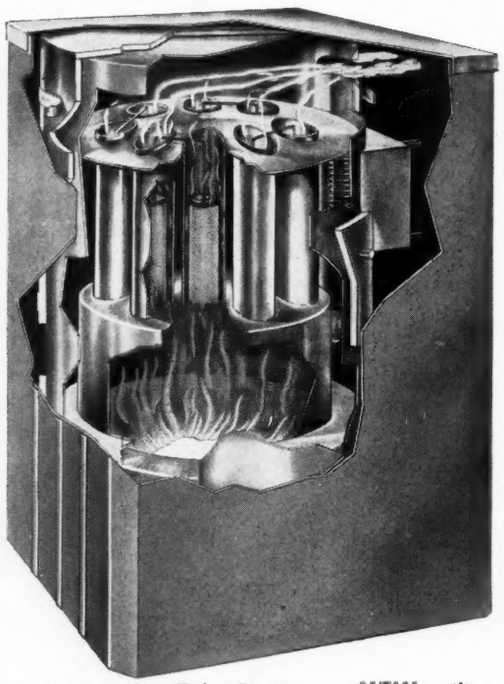
Only other purpose for which the Ministry is presently granting fueloil in either the domestic or industrial sphere is for grass drying. None of the new houses which are being erected by the municipalities are using oil; very few have central heating. What is being discussed is the possibility of district heating whereby hot water is pumped from a central plant to a large number of houses in a given area. A fair number of schemes of this type are now in progress but they are designed to consume solid fuel and preferably low grade solid fuel.

As a result of this situation (which is expected to continue) Britain can be meantime regarded as off oilfiring, always with the exception of the limited number of public buildings which are permitted to introduce oil and are granted a license for the purpose.

New Sales-Making Features!

ACME DUAL "8"

High Efficiency BOILER - BURNER UNIT



NEW Engineered Stainless Steel Intensifier Tube Design . . . **NEW** utilization of gases, which commonly escape in chimney heat . . . **NEW** uniformity of heat throughout full length of tubes . . . **NEW** high speed in heating . . . **NEW** low in fuel consumption. The ideal combination for the organization that seeks practical new features and sales-making talking points.

Beautiful streamlined green cabinet with chrome trim; top covers easily removed; tankless water heater; removable type, 240 G.P.H. Hi-pressure boiler flues; blanket rockwool insulation. Pre-cast combustion chamber. All accessories conveniently located.

WRITE FOR INFORMATION ON EXCLUSIVE TERRITORIES

A few desirable territories are still open to organizations familiar with oil heat selling. Complete literature will be forwarded on request.

ACME TANK AND WELDING

Div. the United Tool & Die Company

1031 New Britain Avenue

Elmwood (Hartford), Conn.

Shell Releases Head For Royalty-Free Use

SHELL DEVELOPMENT CO., which controls distribution and use of the Shell combustion head, has announced that manufacturers of high pressure gun type oilburners now may use the head without royalty payments The no-charge offer is being made, effective on and after October 1, in the interest of fueloil conservation, according to H. Norcross, vice president of Shell Development.

The combustion head was perfected by the company's engineers in 1944, after several years of laboratory development. In 1945, the device was installed in the homes of a few company employees. When these units prove satisfactory confirming laboratory findings, Shell began to license the combustion head on a royalty basis to a few oilburner manufacturing concerns, permitting them to market it as an integral part of their domestic oilburners.

At the end of a two and one-half year period, fuel savings in the test homes ranged from 14 to 36 percent, and averaged almost 25 percent, exceeding even maximum predictions made on the basis of laboratory data.

Mr. Norcross said that the combustion head had not been made royalty free prior to this time because the company wished to retain control of its design and application long enough to substantiate its value in actual field operation.

◈

Joe Hearst, president of Automatic Burner Corp., Chicago, was honored by friends and associates on September 21, to mark the completion of his twenty-fifth year in the oilburner business. The company, long prominent in the oilheating business, was founded by his father, J. H. Hearst, in 1920. Joe joined the company in 1923, after completing school.

R. L. Persons has been named district manager of the St. Louis territory for Penn Electric Switch Co., Goshen, Ind., replacing O. G. Tinkey. Mr. Persons has had considerable field engineering experience, with a background in the application of automatic controls for heating and other uses.

Duty-Designed

AUTOMATIC HEATING EQUIPMENT FOR SMALL HOMES

by Timken Silent Automatic

Announcing Two Extraordinarily Efficient Heating Units

For Warm Air Heating and Winter Air Conditioning—

THE HI-FURNACE

Designed specifically to provide small homes with a completely modern heating package, this new Timken Silent Automatic unit combines a wall-flame oil burner, furnace with radiator, blower, air filters and automatic humidifier (extra optional equipment), all in one fully-integrated, super-efficient unit.

The Same Amazing Wall-Flame Oil Burner Fires Them Both

Completely quiet and completely dependable, the famous Timken Silent Automatic Wall-Flame Oil Burner consistently saves up to 25% or more on fuel oil bills. The wall-blanketing wall-flame gives faster, more uniform heat, too.

For Hot Water Heating, Radiator and Radiant Systems—

THE HI-BOILER

The full benefits of modern automatic heating—*plus* fully automatic domestic hot water—are introduced into even the smallest homes by this remarkable unit. The single, space-conserving cabinet contains a wall-flame oil burner, heating boiler, domestic water heater, expansion tank and complete wiring and control system.

Here's your chance to *really* crack the small home market—America's *biggest and fastest growing* oil heating market!

The famous Timken Silent Automatic line now covers that rich and profit-ripe field in a way no other line can approach. Here are oil furnaces, oil boilers, water heaters Duty-Designed especially for *small* homes. Look at these remarkable new self-contained units, the Hi-Boy and the Hi-Boiler. They give you the *modern* answer to every heating dealer's prayer!

Best of all, the Timken Silent Automatic small home line is priced to put you in the best kind of a competitive position. Yes, any way you figure it, here's the top profit line today—*the Timken Silent Automatic line!*

TIMKEN
Silent Automatic
OIL HEAT

TIMKEN SILENT AUTOMATIC DIVISION
The Timken-Detroit Axle Company • Jackson, Michigan

Accepted S A Standard
TRADE MARK REGISTERED

OTHER UNITS IN THE FAMOUS TIMKEN SILENT AUTOMATIC LINE

OIL FURNACES

Timken Silent Automatic Oil Furnaces for larger homes give you modern winter air conditioning at its economical best. They heat, humidify, filter and circulate the air for perfect comfort always. The fuel-saving wall-flame oil burner is the heart of these units.

OIL BOILERS

Experience-designed and quality-built, the great Timken Silent Automatic Oil Boilers are unexcelled for long life—unrivaled for low-cost operation. No other comparable unit offers so many features for quiet, clean, long-lasting satisfaction.

WATER HEATERS

Here's an abundance of hot water for showers, laundry, dishes, cleaning—at only a few cents a day! Timken Silent Automatic Water Heaters, both coil type and tank type shown, come with the wall-flame oil burner.

Industry Groups

Activities of local and national industry associations are reported monthly in this department. Secretaries are invited to send reports of their Group's activities to reach the editor by the 20th.

New England OHI Asks Code Of Fair Trade Practices

TEN REGIONAL MEETINGS have been held by the Oil Heat Institute of New England to explain and promote its petition for a Code of Fair Trade Practices for the Oilheating industry. A hearing will be held on the petition in the Statler Hotel, Boston, September 30.

The proposed code will cover the sale and promotion of oilburners and accessory equipment as well as fueloil. An announcement by the Federal Trade Commission, which will hold the public hearing, names among the subjects to be covered: "Deception as to the available supply of oil; untruthful and misleading advertising; deceptive guarantees; discrimination in services or facilities; wrongful use of 'loss leaders'; selling below cost; misuse of the word 'free'; and commercial bribery." Additional subjects may be proposed at the meeting.

The New England OHI staff, headed by Fred N. Beckwith, executive secretary, held meetings at Fall River, Mass., and Providence, R. I., on September 14, New Haven, Conn., on the 15th; Hartford and Springfield on September 16; Worcester on the 17th; Boston and Salem, Mass., on September 22, and at Portland, Me., and Manchester, N. H., on September 23. It was pointed out that when approved the Code would affect every firm or individual doing business in New England.

Proposed rules will cover activities relating to such oilburner accessory equipment as controls, tanks and piping directly used in the oilfiring system, but not to the general heating system.

About 60 industries have adopted fair trade rules, most of them in the manufacturing industries. There are a few rules in wholesale and jobbing trades, but this is believed to be the first attempt to write trade practice rules for so wide a retail and service industry.

SYMBOL
of
DEPENDABILITY

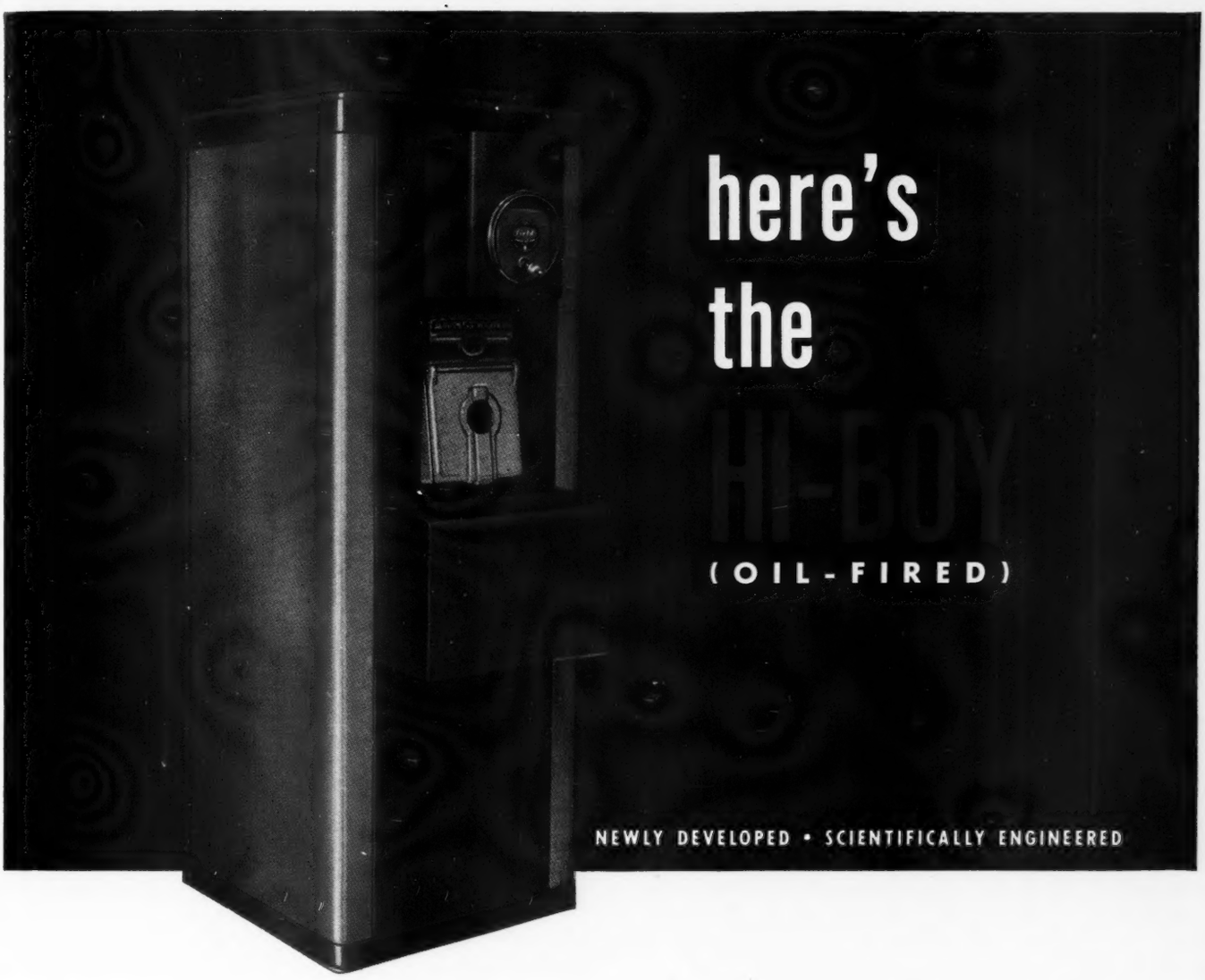
Reliability needs no replacement or repair.
The starting switch is the part that wears and fails the most in all split phase electric motors.
MD motors, built without a starting switch, eliminate 85% of all oil burner motor troubles.
MD motors use starting relays, not switches— these relays have been proved by over a million field units.
MD motors can be DEPENDED upon to start any time, under the worst conditions, on time.

ELECTRIC MOTOR DEVELOPMENT COMPANY
WICKLIFFE, OHIO

OHI Booklet Stresses Oil and Dollar Conservation

A BOOKLET, of envelope stuffer size, prepared by the Distribution Division, Oil-Heat Institute of America, Inc., New York 16, N. Y., is available at a cost of $1.10 per hundred copies. It is suggested that copies be sent or given to all customers or prospects, stressing the continued importance of economizing on the use of fueloil by observing simple and effective methods to reduce fuel costs.

W. O. Spiess, national secretary of the Distribution Division, in describing the booklet, calls attention to the fact that the total deficiency in fueloil supplies last winter amounted to not more than 1% of total annual consumption. "However," he continues, "it is not nearly so well known that conservation efforts by users as a result of . . . persuasions saved 9%! Studies show that the almost insignificant 1% lack could have been a 10% catastrophe if no effort had been made to save oil." Reminding dealers that continued conservation this year



ANOTHER TRIUMPH FOR ARMSTRONG

Here's a timely, sure-fire profit-maker for Armstrong dealers! It's the new Armstrong Vaporizing-Type Oil-Fired Hi-Boy. Developed in the laboratories of the leader in the warm-air heating field, it sells at a really attractive figure. It installs with a minimum of labor. It is built to avoid excessive service demands. It comes to you completely assembled. Its two-tone blue baked enamel cabinet is good-looking enough for a living-room. It occupies less than a square yard of floor space, yet delivers more than 70,000 BTU at the bonnet.

For one-floor-plan homes, for restaurants, shops, offices — or anywhere that floor space is at a premium — it is ideal, and with no sacrifice of efficiency.

The Armstrong Oil-Fired Hi-Boy is approved by the Underwriters' Laboratories, Inc., for installation *against* a wall at the rear and with just nine-inch smokepipe clearance! It meets the requirements of Commercial Standard CS-104 of the United States Department of Commerce.

With this space-saving winter air-conditioner you can *really* get in on the ground floor. Send today for Bulletin 801, hot off the press. It gives detailed description, specifications, dimensions.

The Armstrong Gas-Fired Hi-Boy is the ideal gas space-saver. The Triple-Fire burns coal, gas or oil. Other Armstrong coal, gas and oil heating units provide a complete line for every fuel, every heating need.

ARMSTRONG
FURNACE COMPANY

COLUMBUS 12, OHIO

fueloil & oil heat

will benefit users by an actual dollar saving, Mr. Spiess, urges dealers to make use of the booklet to impress customers with the importance of again aiming for conservation during the coming heating season.

"Save Oil—Save Dollars," the title of the booklet, is a compilation of twenty-nine recommendations for cutting heating bills. Prominent among the suggestions are those that urge lower night temperatures, lower heat when the house is unoccupied, removal of soot accumulations, installation of baffles, insulation of steam and hot water lines, attic, walls and under floors, installation of storm windows and doors and weatherstripping around windows and doors. It is explained also to homeowners how advantageous it is to check heating units for proper size and to replace worn out or inefficient equipment.

Complete Revision Of Warm Air Manuals

THE COMPLETION of the revision of all manuals published by the National Warm Air Heating and Air Conditioning Association, Cleveland, Ohio, was announced at the group's recent mid-year convention by W. D. Redrup, Majestic Furnace Co., Huntington, Ind., chairman of the Association's Installations Codes and Application Engineering Advisory Committees. Revision of manuals 8 and 9 were the last two accomplished, along with the work-sheets used with both manuals.

Manuals and their titles now available in revised form are: Manual No. 1—How to make a comfort survey and How to make floor plans; Manual 2—How to check frame house construction; Manual 3—How to figure heat losses; Manual 5—Code and manual for gravity systems; Manual 6—Service manual for changing forced air systems to continuous air circulation; Manual 7—Code and Manual for winter air conditioning systems; Manual 7A—Code and manual for ceiling panel systems; Manual 8—Yardstick for classifying winter air conditioning systems; Manual 9—Technical code for warm air installations in larger buildings. In addition, there are seven work sheets available.

The Association reports the largest sales of manuals and work sheets this year ever experienced and calls the collection the most complete library of installation text books for warm air systems.

Prices and details are available from Association headquarters.

NYOHA Protests Installment Curbs

IN A LETTER, dated September 16, to the Board of Governors of the Federal Reserve Bank of New York, the New York Oil Heating Association, Inc., Long Island City 1, N. Y., formally protested "the inclusion of modernization and repair credits under the Consumer Installment Credit Regulation W." Signed by Philip H. Schepp, executive secretary of the association, the letter emphasizes the hardship inherent in making it more difficult for the lower income groups, from which a majority of oilburner purchases are made, to buy a new or replacement oilheating system.

Developing the point that installation of oilburners is a prime contribution to the comfort and well-being of home

The General
CAN INCREASE YOUR
SERVICE DOLLAR VOLUME
WITH INSTALLATIONS
★ Make profits on every installation.
★ Eliminate troublesome call backs.
★ Build regular repeat business through cartridge replacements.
★ Help customers save money by giving cleaner burning fuel.
★ Build goodwill and customer loyalty by providing trouble-free operation.
Like this
General HAS THE RIGHT FILTER
FOR EVERY OIL HEATING PLANT!
The General is popular with all contractors, dealers and fuel oil service companies because it has proven the best fuel oil filter for heating plants, hot water heaters, and room heaters. The General will prove a profitable leader for you, too! Report after report in our files bear out these statements.
For average installations three models, DeLuxe 2A-300, Master 2A-700 and Economy 1A-25, are outstanding leaders in the General line because they are priced to sell easily, built to give long-lasting service, and designed to provide high-degree performance.
There is no better time than now in letting General Fuel Oil Filters increase your service dollar volume. Contact your jobber immediately or write direct for information and discounts.
Listed: Re-examination Service, Underwriters Laboratories
GENERAL FILTERS INCORPORATED
GENERAL FUEL OIL FILTER
12890 WESTWOOD AVE.
DETROIT 23, MICHIGAN
SEE YOUR JOBBER OR WRITE DIRECT TO THE FACTORY

NOW IS THE TIME

To Profit by Selling..

..Fuel Saving AND *Comfort* WITH SKUTTLE HUMIDIFIERS

Fuel of all kinds is high in cost and may not be too abundant. People generally are hot to buy anything with which they can save fuel without shivering.

Skuttle Humidifiers are made to order for this market. Their fuel saving feature makes them go like hot cakes with a little sales effort.

With Skuttle Humidification, thermostat control of a warm air furnace can be 3 to 4 degrees lower and the house may be even more comfortable. Oil companies say every degree lowered, saves 3% of the fuel.

The warm moistened air is far more healthful. Desert dry air *without humidification* decreases resistance to colds, coughs, bronchitis, "flu," pneumonia and sinus troubles.

Skuttle Series 600 Humidifiers—Self Flushing—Self-Cleaning—This feature is a sales clincher—raise a lever and the Skuttle Series 600 flushes itself, cleaning out lime, muck and dust.

Vapoglas* Evaporator Plates—Pure glass fiber—faster capillary action than any other plate or wick. They assure maximum evaporation.

Skuttle Humidifiers are easy and profitable to sell. And you can sell replacement plates every year at additional profit. Write for details.

**Patents Pending*

Skuttle

MANUFACTURING COMPANY
4099 BEAUFAIT • DETROIT 7, MICH.

fuel oil & oil heat

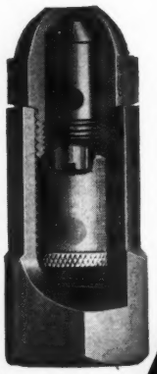
owners and occupants, the protest contends it is essential "that in order to combat inflation that the home owner be given the opportunity to pay out of his monthly income for the installation or replacement of a new oil heating unit." Further on the subject, the letter expressed the belief that eliminating the curbs as established under Regulation W would not be an inflationary step, since such purchases would not be bidding for materials in short supply and because the industry at present is experiencing a deflationary period.

In conclusion, it was represented that new regulations by government agencies would result in confusion and upset to industry, and would be harmful generally to the home owner and the economy. In addition to placing small business men in a precarious position, it was submitted that restrictions on installment credits for home maintenance, repairs and improvements "would be seriously detrimental and ill-advised to the small home owners and G.I.'s owning homes who are looking to maintain them in livable conditions for their families."

TAKE A MONARCH "TIP"-- AND COMPARE RESULTS!

Most any nozzle will produce some kind of a fire, but —until you have tried Monarch Stainless Steel Nozzles (of a type with spray characteristics matched to your air mixing equipment) you won't know how good they really should be. State make of burner and sketch or accurately describe air mixing head and make test *yourself* with the series Monarch Nozzles we recommend.

Pulsation: We can usually suggest a remedy. Give full details of burner and the job.



F-80

Air Cones & Stabilizers

Monarch combinations have been used as original equipment by burner manufacturers for many years and dealers have used thousands of them to make old burners more efficient. Eliminate guesswork—Use tried and tested equipment and be sure of *results*.
Now available for 3⅛", 3⅞", 4" 4¼", 4½", 4¾", 6" and 8" I.D. air tubes.

Replacement Valves

Monarch piston type pressure regulating and cut-off valves are available in models to suit most replacement needs. G-49 valves can be mounted in any position and piston will not jam from dirt. Contain no bellows or diaphragm to break or corrode.

Write for Catalog D

MONARCH MFG. WORKS, INC.
2503 E. ONTARIO ST.
PHILADELPHIA 34 PENNA.

European Distributor: A. Coutau, Rue de la Scie No. 16, Geneva, Switzerland

Larger Demand Reported For Hot Water, Steam Heat

A BROCHURE, prepared by the Institute of Boiler and Radiator Manufacturers, New York 17, N. Y., and being sent to heating and piping contractors, dealers and distributors of boilers and radiators, reports a strong upswing in demand for hot water and steam heating equipment. Bureau of Census figures are cited to show that 30.6% more boilers were sold in 1947 than in 1946. In 1940, according to the brochure, only 28% of home builders installed boiler heating, but today IBR reveals several surveys by a well-known shelter group magazine show that 48.7% of small home builders expressed the intention of installing some form of radiant ray heating. Cooperation between dealer and contractor, with the educational advertising program of the Institute, is advanced as a means of speeding up the trend to hot water and steam heating.

IBR advertising this year is employing advertisements in *Better Homes and Gardens, The American Home, House Beautiful* and *Small Homes Guide* to direct attention of magazine readers to the advantages of radiant ray heating. The advertisements discuss the six essentials of home heating as provided by boiler heating and offer copies of the Institute's consumer booklet, "Enjoy Better Living With Radiant Sunny Warmth," for a more complete description of these elements. More than a hundred thousand copies of the booklet have been distributed, with additional requests being received and filled daily.

MOHA Announces Opening Meeting

THE 155TH MEETING of the Massachusetts Oil Heating Association, Inc., Watertown 72, Mass., and the first of the current season, was held at the Fox and Hounds Club, Boston, September 21. Featured speaker, Frank P. Scully, president, Scully Signal Co., Cambridge, Mass., discussed the latest scientific developments in the use of the Scully Ventalarm. Each member present received as a gift a Scully Fil-Gard signal for his automobile.

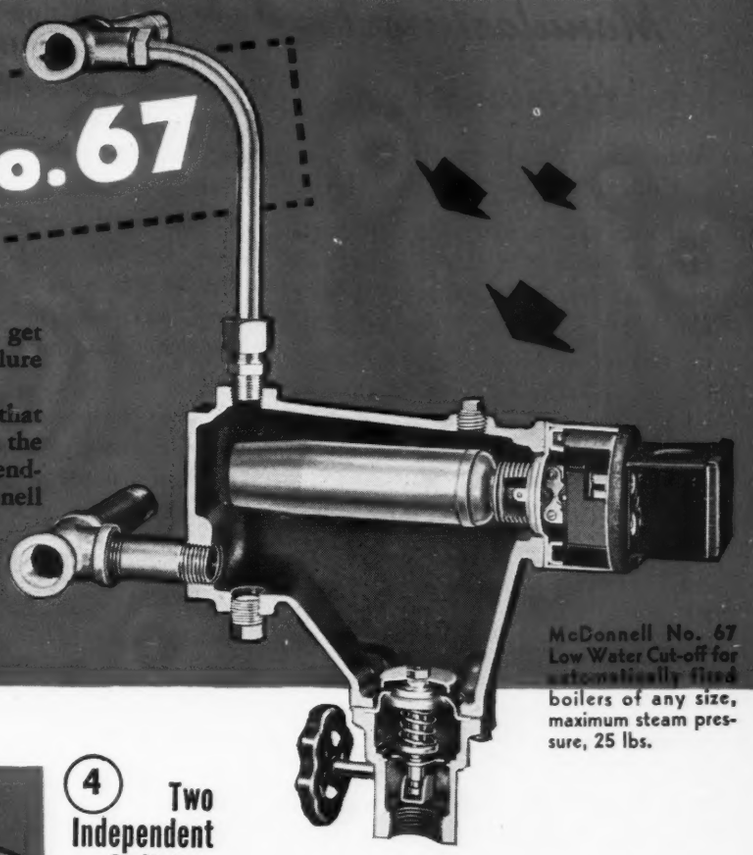
Honorary Secretary-Treasurer Fred N. Beckwith delivered his regular report on current industry problems and affairs.

Experience speaks in every detail of the . . .

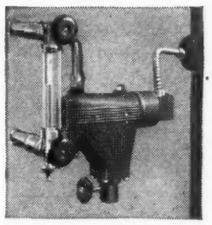
McDonnell No. 67

A low water cut-off doesn't get into action very often, but when it *is* called on, failure to act can spell disaster!

That's why it pays to install the low water cut-off that will dependably cut the current to the burner when the water level drops. No other cut-off has proved so dependable in this tough assignment as has the McDonnell No. 67. It does its job right because it incorporates design and construction found in no other low water cut-off — features developed step by step by step through many years of "Doing One Thing Well". Some of these features are described below:

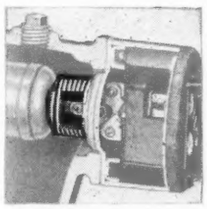


McDonnell No. 67 Low Water Cut-off for automatically fired boilers of any size, maximum steam pressure, 25 lbs.



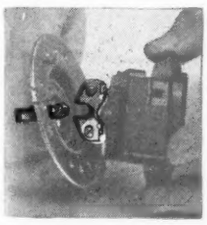
1 The "Quick Hook-Up"

This patented feature, dating back to 1932, provides a quick, easy way to install the No. 67 right in the water glass tappings. But far more important, it represents the one dead-sure way to duplicate gauge glass conditions in the float chamber.



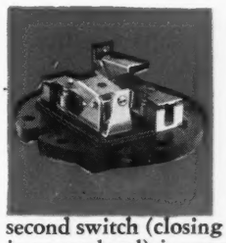
2 Packless Construction

A bellows seals off the float chamber; eliminates that old headache—the packed joint. Float is pivoted at center of bellows to prevent bellows distortion — a typical McDonnell refinement.



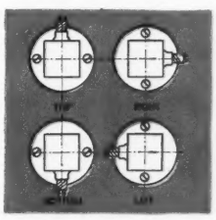
3 Roller-and-Rocker Switch Action

This ingenious design prevents improper on-and-off action of cut-off switches due to minor float bobbing—another typical refinement.



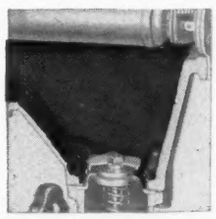
4 Two Independent Switches

In addition to the regular low water cut-off switch, a second switch (closing on a small drop in water level) is provided in the No. 67. This permits use of McDonnell No. 101 Electric Water Feeder when desired.* Both switches are precise, dependable — built throughout in our own plant.



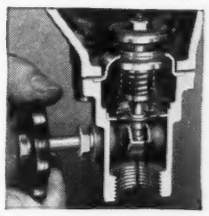
5 Adjustable Terminal Box

The four-position terminal box assures easier, neater wiring—one more example of "Doing One Thing Well" at work.



6 Deep Sediment Chamber

People sometimes fail to follow blow-down instructions. Even when they are careless, the deep bowl prevents trouble.



7 Straight-Through Blow-Off Valves

A standard valve wouldn't do for a blow-down, so we built our own. It provides an extra-wide orifice to sluice out all the sediment with just a half turn of the handle—is spring closing so it can't be left open. More important still, it has a big discharge capacity which drains the float chamber faster than water can enter from the boiler, lowering water level for testing. Insurance companies require this!

Yes we make the No. 67 right; test them individually; stand behind them in service. This is your kind of low water cut-off

*A low water cut-off protects a boiler by stopping the burner when a low water condition occurs. However, completely automatic boiler water level control is accomplished by a combined water feeder and low water cut-off in which the feeder automatically maintains the water level under normal conditions and the cut-off automatically stops the burner in an emergency. Such combinations are the No. 67-101, the No. 47-2 and other feeder-cut-off combinations for larger and higher pressure boilers.

Your Jobber Stocks Them

McDONNELL & MILLER, INC., 1310 Wrigley Building, Chicago 11, Ill.

Doing One Thing Well

McDONNELL *Boiler Water Level* CONTROLS

Manufacturers Activities

Automatic Products Kit Contains Line Of Sales Helps

A MERCHANDISING KIT, being distributed to oilheating equipment wholesalers and manufacturers by Automatic Products Co., Milwaukee, Wis., is entitled "Selling Oilheating Accessories to 4 Million Customers." The kit contains a line of sales helps for the AP line, including thermostat comfort kits, for converting manually-controlled heaters to automatic operation, the Oilifter fuel pump and Trapit fueloil filter.

Included are a list of free newspaper advertising mats, a new consumer catalog available to dealers, an outline of the consumer and trade paper advertising that promotes AP products. Sales bulletins and installation instructions also furnished with the kits, are supplemented by a booklet describing a sound film, "Comfort with Automatic Heating," available for showings at dealer gatherings.

Timken Advertising Kicks Off Open Season On Burner Sales

TIMKEN ADVERTISING in August, occupying large space in metropolitan newspapers, opened the fall selling season for oilheating equipment, industry solons dissenting at the moment. The ads, headed "Oil Shortage Over," and featuring an article in the *Oil and Gas Journal,* was designed to prove to the public that talk of oil scarcity was out of date.

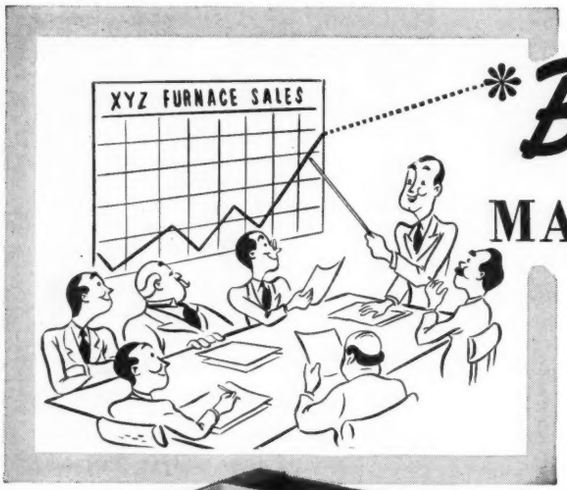
Timken's blast—and it was a bold reversal of industry policy, at the least—touched off a flurry of denial from the oil industry, but this attitude had changed to practical agreement by the middle of September. The subhead quoted from the article, "There will be ample supplies of heating oil in all parts of the country next winter," brought cautious warnings from oil industry officials in the first few days after the ads appeared, but these objections took another and closer look at supply figures.

Among the first to object to optimistic fueloil supply news was Ralph Champlin, chairman of the Oil Industry Information Committee, who said:

"It does not help the public to understand the true picture of the oil supply situation by headlining in advertisements such statements as 'Oil shortage is over' or 'There will be plenty of heating oil in all parts of the country next winter.' "

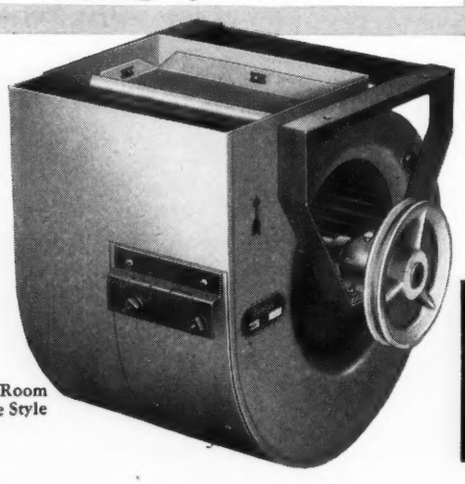
"In the face of odds, the industry got through a difficult season last winter," he added. "It was aided by the whole hearted response on the part of the public, to appeals for the conservation of heating oil, which resulted in savings of nine per cent. We still need that cooperation, and it is certainly in the best interests of both the industry and the public to get full value out of oilheat."

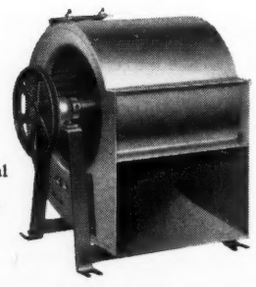
W. H. (Dixie) Butler, of Coastal Oil speaking before the Empire State Petroleum Association at Buffalo, criticized the oil industry for attempting to discourage the sale of oilburners while taking no action against other oil-consuming industries, but said he could not "condone the oilburner industry taking advantage of one article appearing in the trade press to launch a campaign for

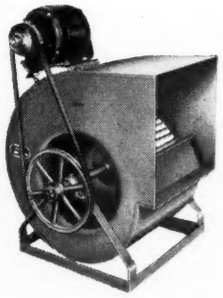


Brundage BLOWERS MADE THE DIFFERENCE!

Our standardized production of *Special Blowers* will solve your problems *Too!*


Utility-Room Furnace Style

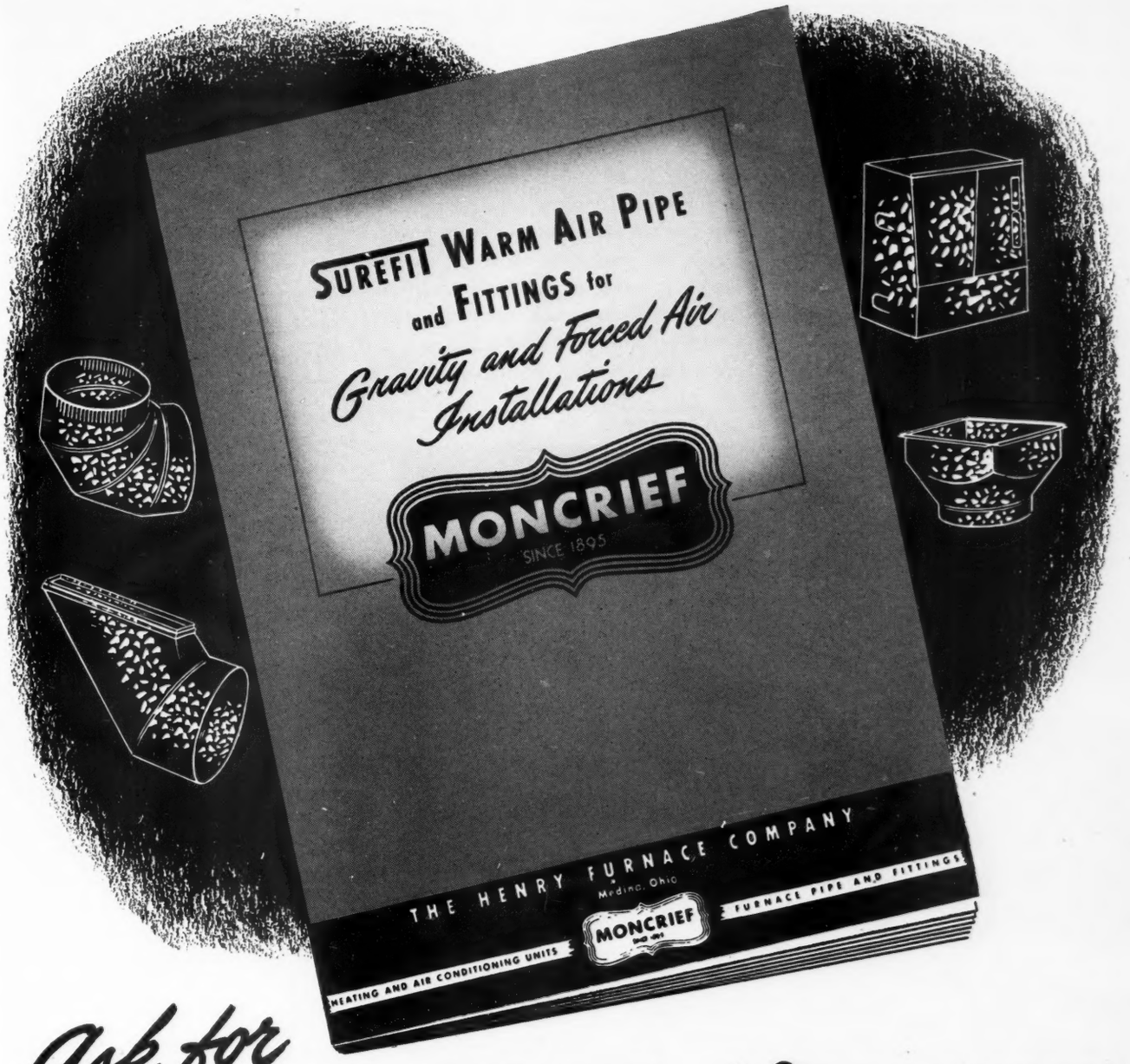

Conventional Furnace Adaptation


Evaporative Cooler Style

Brundage COMPANY

Blower Specialists Since 1919

582 NORTH PARK STREET
KALAMAZOO 11, MICHIGAN



Ask for a copy OF THIS NEW *16* PAGE BOOK

Here's a new Moncrief book just off the press that gives complete details of all the latest types of furnace pipe and fittings—Surefit Pipe and Fittings.

Moncrief Surefit Pipe and Fittings are all that the name implies. Die stamped and machine made, they are manufactured to precision standards. They fit accurately! They fit easily and quickly! They fit surely! They lock tightly!

Back of Moncrief Surefit Pipe and Fittings are not only skill and fine workmanship acquired from years of manufacturing experience, but also one of the largest plants in the industry equipped with the most modern machinery.

For either Gravity or Forced Air, the Surefit Pipe and Fittings shown in this new catalog, provide the best method for a streamlined, good-looking and economical installation.

Send for your copy of this book today!

THE HENRY FURNACE COMPANY

Medina, Ohio

HEATING AND AIR CONDITIONING UNITS — MONCRIEF SINCE 1895 — FURNACE PIPE AND FITTINGS

fuel oil & oil heat

burner sales with utter disregard of the touch-and-go supply situation." Other industry spokesmen objected to the sudden all-out statement to the public that the oil scarcity was over, but most of them are willing to concede—at least in private—that the possibility of serious stringency this coming heating season is remote.

Reporting on the Timken campaign to the advertising trade, *Tide*, advertising trade paper, says, "It was the industry's first strong selling copy since the war, but most oil men thought Timken's ad had broken the industry's conservation line before it was safe. . . .

"Timken is standing by its copy declaring it is confident that its facts and interpretations of those facts are correct. If anyone is wrong, Timken's sales manager, R. M. Marberry, thinks it must be the overly cautious conservationists. But Timken has agreed, however, not to blazon the good news about the easing supply situation in headlines again. In the future its copy will repeat the same facts, but in a small bold-face box subordinated to product-selling copy."

Flexible...
Light Weight
...Easy to Handle

"NEWTYPE" FUEL OIL HOSE

Drivers *like* "Newtype" because it's the easiest fuel oil hose to carry out and reel up. Slides smoothly over steps, driveways, walks, lawns. No kinks to halt its progress, or retard the flow when nozzle is opened. Should hose be accidently crushed, it can be quickly rounded into shape again at the truck.

A tough, brown cover provides exceptional resistance to severe abrasive wear, prolonging the service life of the hose and greatly reducing replacement costs. Every "Newtype" equipped truck will operate *more profitably* . . . through quicker, *extra* deliveries. Contact our nearest branch for prices.

GOODALL RUBBER COMPANY

GENERAL OFFICES, MILLS and EXPORT DIVISION, TRENTON, N. J.

Branches: Philadelphia • New York • Boston • Pittsburgh • Chicago • St. Paul • Los Angeles San Francisco • Seattle • Salt Lake City • Houston • Distributors in Other Principal Cities

Est. 1870

York-Heat Sponsors Series Of August Dealer Meetings

A SERIES of three dealer meetings, held during the month of August in Newark, New York City and Utica, N. Y., were sponsored by York-Shipley, Inc., York, Pa. More than 250 York-Heat dealer and distributor representatives attended.

The program centered around "The York-Heat Story," slide film presentation of the company's products, policies, merchandising plans and dealer program, followed by a discussion of current merchandising problems. Mitchel Landau, assistant to the president; George Athana, New York district manager and John R. Adams, advertising counsel, conducted the program. Distributors were hosts with York-Shipley at luncheons preceding the meetings.

Correction

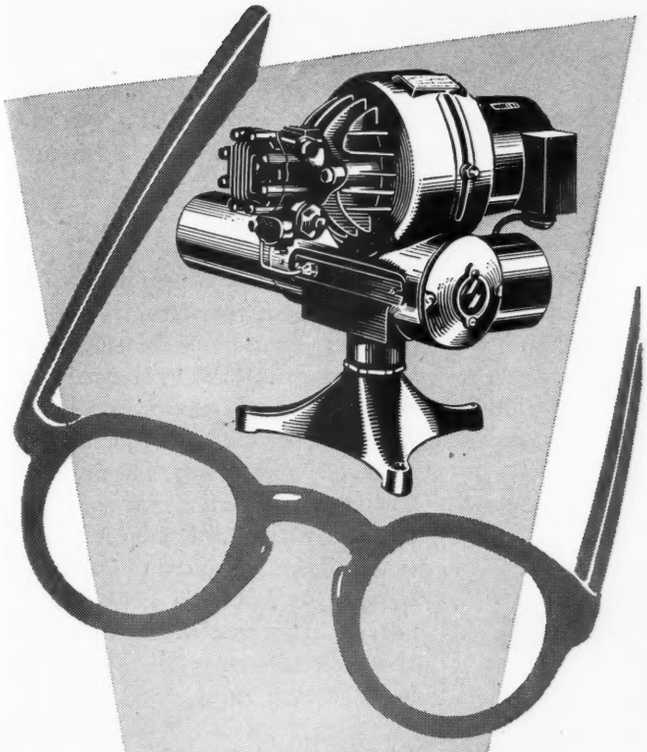
IN OUR JUNE ISSUE, page 87, reporting the removal of Arc-Way Steel Boiler Co. to larger quarters in Dorchester, Mass., it was said incorrectly that the company manufactures two models of boilers for domestic heating, the larger with a rating of 360 sq. ft. of steam radiation. Actually, the firm produces twenty different models of boilers up to 1480 sq. ft. of steam, 4280 sq. ft. hot water.

Sanborn Swirler Names New England Distributor

SANBORN SYSTEMS, INC., Milwaukee 11, Wis., manufacturers of the Air Swirler, air handling device to be added to burner draft tubes, has appointed Oil Heating Supply Co., Framingham, Mass., as exclusive distributor in the New England States. Models of Air Swirlers now available will accommodate draft tubes up to 5" in diameter, burner capacities from .75 to 5 gph.

Thatcher Dealers Receive Set Of Envelope Stuffers

A SET of three envelope stuffers, prepared by Thatcher Furnace Co., Garwood, N. J., are furnished imprinted, free of charge, to its dealers to assist them in promoting the sale of Thatcher equipment. One of the pieces asks eight questions about the oil situation, developing the fact that the present outlook



Magic Glasses

THAT LOOK BACK OVER 27 YEARS

If you had a pair of glasses that would look back 27 years it would certainly be magic indeed. Let's suppose we do. Put them on. Let's look back at 27 years of automatic oil heating. We see 1921 and the first oil burner — clumsy looking, isn't it? We notice the changes through the years. Exterior design has gradually become compact and neat.

Of course our magic glasses can see inside the burner, too. There's the air diffuser. Nozzle position is adjustable. Motor protector has been added and the combustion chamber has been changed to the flame form. All these things are generally considered standard on quality burners today. And all these things were originated by Nu-Way engineers.

As we look now to 1948 we see that Positive Air Controls and Nozzle Shields have been added by Nu-Way engineers as *exclusive* features.

Can our glasses look into the future? Yes, and we see continued progress with Nu-Way continuing in its role as a leader in the development of even better automatic heating equipment.

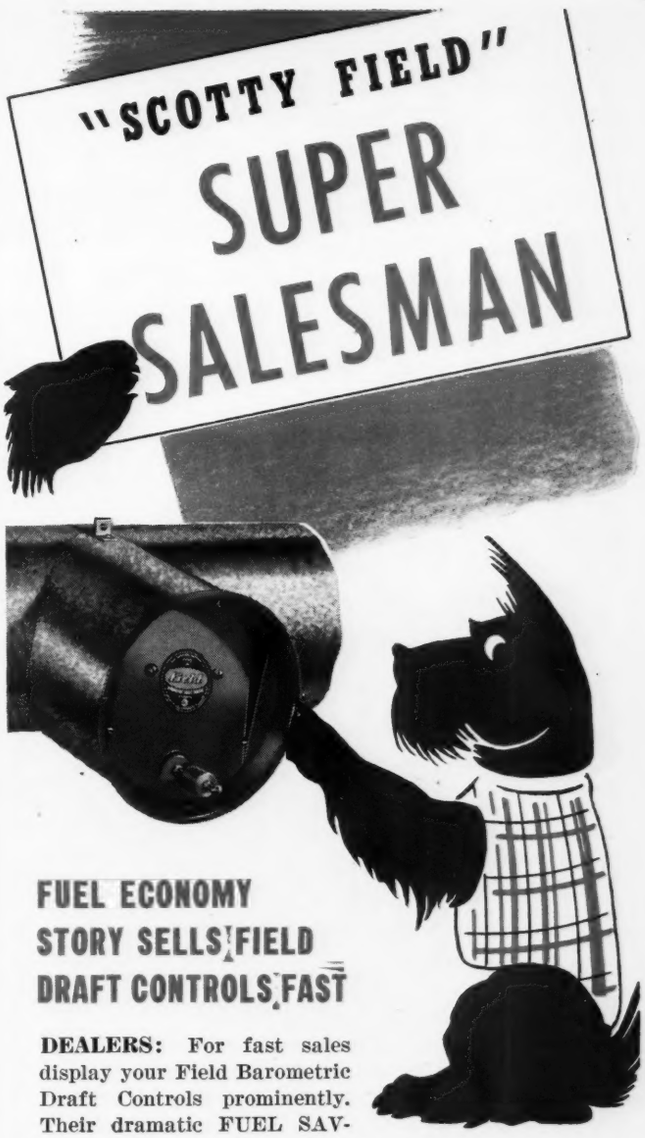
THE *Nu-Way* CORPORATION
Rock Island, Illinois

OIL HEATING EQUIPMENT

Serving distributors, furnace and boiler manufacturers

Automatic Oil Heat Exclusively Since 1921

fueloil & oil heat



FUEL ECONOMY STORY SELLS FIELD DRAFT CONTROLS FAST

DEALERS: For fast sales display your Field Barometric Draft Controls prominently. Their dramatic FUEL SAVING story makes them best-sellers, self-sellers!

A Field Barometric Draft Control improves the performance of any heating plant—provides for lower fuel consumption, increased safety, longer plant life. That's why dealers find it profitable and easy to sell the efficient, durable Field Barometric Draft Control. Write today for complete information on the Field Barometric Draft Control line.

On The Finest Heating Equipment Field Controls The Draft.

See our exhibit at the 9th International Heating and Ventilating Exposition, International Amphitheatre, Chicago, Jan. 24th to 28th, Exhibit No. 1221.

CONTROLLED DRAFT BY Field

FIELD BAROMETRIC DRAFT CONTROLS

FIELD CONTROL DIVISION
H. D. CONKEY & COMPANY MENDOTA, ILLINOIS

AFFILIATES
CRANES—HOISTS

Field REGISTERED

AFFILIATES
BRICK—TILE—STONE

BAROMETRIC DRAFT CONTROLS

for supply this heating season is "good and improving," and then cites the advantages of economy and performance possible with Comfortmaster burners and furnace units.

The other two stuffers discuss Oilmaster boilers, one stressing its economical operation and listing ten features that permit a user to "get the most out of your fueloil dollar." The other folder, stressing "Shirt sleeve comfort" employs a cut-a-way view of a series A Oilmaster boiler-burner unit to illustrate construction, accompanied by copy explaining that the unit is a completely engineered job, specifically designed for its dual function of space and water heating. Each piece of literature contains a listing of the entire line of Thatcher products.

Sid Harvey Planning Wholesale Department

PLANS are being completed by Sid Harvey, Inc., Valley Stream, N. Y., to market its complete line of new and rebuilt oilburner repair parts through recognized jobbers. The new department will be under the direction of Winthrop A. Mandell, who started with the organization thirteen years ago. For the past two and a half years he has been president of Sid Harvey of Mass., Inc. The present twelve Harvey stores, located between Boston and Washington, D. C., will serve as pick-up points for the jobbers, in addition to their present functions.

The establishment of the new department was prompted by repeated requests to make Harvey products available to jobbers. The requests were turned down previously, however, until now when new methods and machinery have nearly doubled the Repair Department's production record of 76,889 defective units rebuilt in 1947. Volume buying also has enabled Harvey to offer jobber discounts on practically all items shown in their latest catalog.

RAC Control Distributed By Jones & Brown, Inc.

DISTRIBUTION of the RAC control, a device to regulate automatically the volume of cold air intake in proportion to the temperature of warmed air ready for distribution, is being accomplished on a national basis by Jones & Brown, Inc., Pittsburgh, Pa. The firm also distributes nationally the line of Ko-Z-Aire automatically fired winter air conditioning units.

The control, which employs a capillary tube to control the supply of cold air intake, already is in production and the company is building an inventory reserve in anticipation of heavy demand.

Sales Department Promotions Made By American-Standard

TEN PROMOTIONS, recently announced by D. D. Couch, vice president and general manager of sales, were described as a move to accentuate the sales efforts of the American Radiator & Standard Sanitary Corp., Pittsburgh, Pa. Daniel J. Quinn, a general sales field manager and an employee of the company and its predecessors since 1925, was named assistant general manager of sales and Harry F. Beglen, field manager, was promoted to district sales manager of the central division. Mr. Beglen will remain in Chicago and supervise the sales activities of offices in Chicago, Detroit, Kansas City, St. Louis, Minnesota and

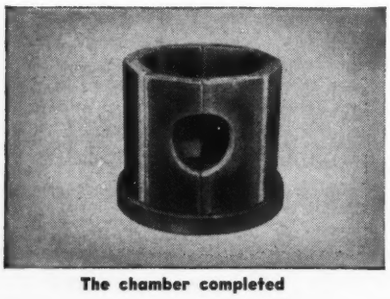
It Puts Old Man Hades Out of Business

High temperature is a persistent fighter that soon puts ordinary Combustion Chambers out of business. But not the *improved* R & I Deluxe Chamber.

Costly ingredients have been added to the refractory which enable R & I Deluxe Chambers to withstand greater heat than they can be subjected to and to provide additional rigidity.

They come complete with floor, which has grooves into which the sides fit. Sides are firmly locked together with clips we supply.

Everything to do a complete job is packed in a strong carton that can be carried and stacked by one man.



The chamber completed

Your supply house has or can get R & I Chambers.

Write us for Bulletin OB-99.

REFRACTORY & INSULATION CORP.
116 WALL ST. NEW YORK 5, N. Y.
Chicago 4, Ill. Newark 2, N. J.
Philadelphia 3, Pa.

R&I Deluxe Combustion Chamber

for COAL · GAS · OIL

Luxaire's 3 in 1 all fuels air conditioning unit

Fits any job!

. . . because

Luxaire's 3 in 1 unit is engineered for COAL

hand fired — stoker fired

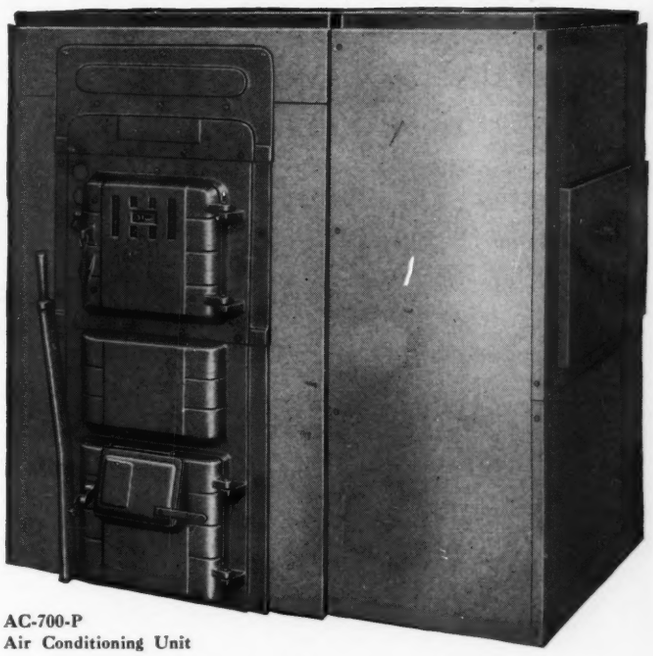
Easily converted and well adapted for OIL and GAS

Luxaire's "3-in-1" unit takes care of the present heating requirements of any home heating installation because it is engineered to do a 3-way job.

When desired, a coal burning installation may be converted at any time to stoker, oil or gas firing.

Luxaire design, that provides a rugged, steel heating element, with long fire travel and large heating surfaces make this an ideal unit for any fuel. Joints and seams are welded leak-proof and gas-tight.

You're in on any job with Luxaire's "3-in-1" all fuels air conditioning unit.



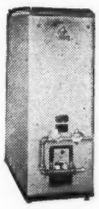
AC-700-P
Air Conditioning Unit

THE C·A·OLSEN MANUFACTURING COMPANY

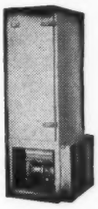
Luxaire — HEATING & AIR CONDITIONING UNITS

ELYRIA 12, OHIO

Gas-Fired, Steel Gravity Furnace
Series G



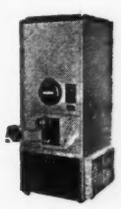
Gas-Fired, Utility Steel Air Conditioning Unit
Series H



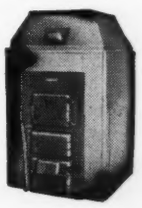
Gas-Fired, Cast Iron Air Conditioning Unit
Series CA

Oil-Fired, Steel Air Conditioning Unit
Series O

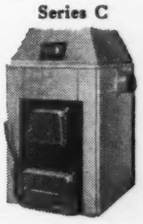
Oil-Fired, Steel Utility Air Conditioning Unit
Series VH



Coal-Fired, Steel Gravity Furnace
Series 700



Coal-Fired, Cast Gravity Furnace
Series C



fueloil & oil heat

Texas. Edward J. Duke, manager of the Los Angeles sales office since 1935, was named district sales manager of the western division, with headquarters in San Francisco, supervising sales activities of offices in Los Angeles, San Francisco, Denver and Seattle. Other district sales managers named were L. A. Kelly, New York sales office manager, now district sales manager of the northeastern division with New York headquarters and supervising sales activities there and at the Boston, Buffalo and Newark offices; Harry H. Steck, field manager, who assumed the duties of district sales manager of the southeastern division, with Washington headquarters, and responsible for sales activities at that office and in Atlanta, Baltimore, Cincinnati, Philadelphia, Pittsburgh and Richmond, Va.

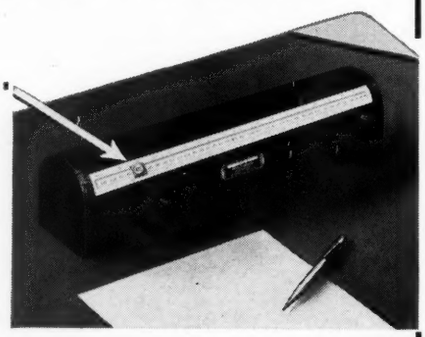
H. M. Anderson, manager of the Seattle sales office, has moved to Los Angeles to succeed Mr. Duke as manager and, in turn, was succeeded at Seattle by Vincent H. Hoefling, of the Richmond, Va. sales office. Mr. Kelly was succeeded as manager of the New York sales office by Daniel J. Keefe, former Buffalo manager, which position has been assumed by C. W. Hewlett, Syracuse, N. Y. Ross H. Porter, the final appointee, has advanced to the position of assistant manager of the Pittsburgh sales office, formerly held by H. Melvin Carnahan, who has managed the office since the retirement of E. H. Eggleston last year.

Sensational

DEGREE DAY DISPATCHER

SETS UP THE NEXT FUEL OIL DELIVERY "INSTANTLY"

One Flip of the "FINDER" and the exact total Degree Days at which the next delivery should be made appears magnified on the dial.



NO Dividing Subtracting Multiplying Adding (Pat. Applied for)

OVER 55,000 PRE-CALCULATIONS DO IT AUTOMATICALLY

THE DEGREE DAY DISPATCHER SAVES UP TO 90% ON TIME

INCREASES THE SIZE OF DELIVERIES—
DECREASES THE NUMBER OF DELIVERIES—
NEEDS LITTLE OR NO TRAINING TO OPERATE—
INSURES ABSOLUTE ACCURACY—

$25.00 Complete with operating cartridge for single and multiple 275 gallon tank installations.

Clip and Mail today for FREE trial offer.

RUE MANUFACTURING CO., 1433 Melon St., Philadelphia 30, Pa.

Please send me D.D.D. for 10 Days FREE inspection and trial. Within that time I will remit $25.00 plus mailing charges or return the instrument postpaid.

NAME .....

STREET .....

CITY .....ZONE.....STATE.....

Michael & Goldberg Mark Twenty-Fifth Year In Business

MORE THAN 200 representatives of manufacturers they represent were guests of Michael & Goldberg Plumbing and Heating Supply Co., Brooklyn, on September 16, to mark the firm's 25th Anniversary. The company is the parent of Radiant Utilities Corp., manufacturer of domestic oilheating equipment.

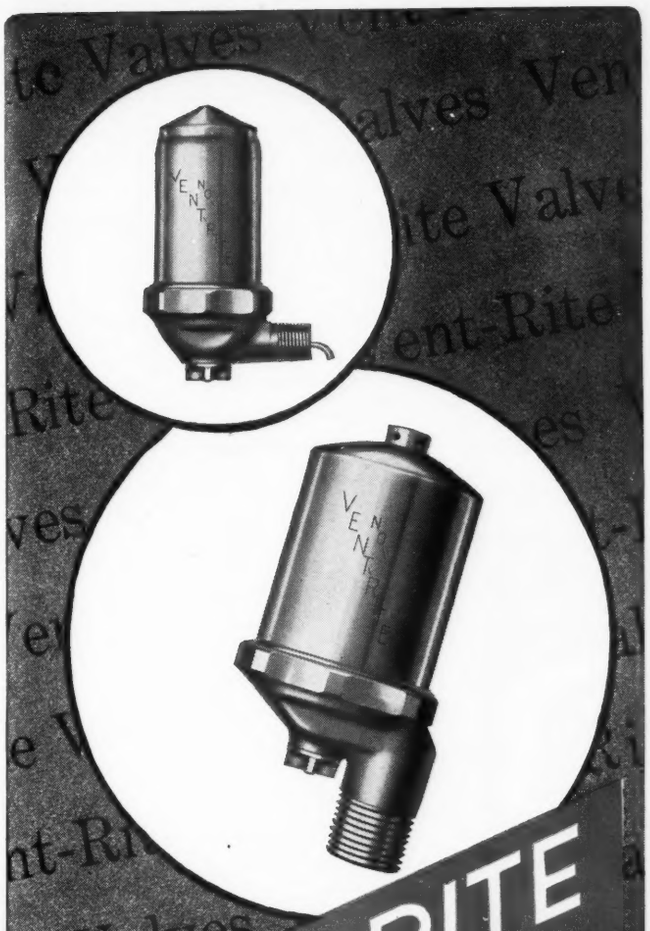
In the section of the firm's new building at 8805 Eighteenth Ave., Brooklyn, which shortly will contain the oilburner assembly department, tables were set and a variety of refreshments were served to the manufacturers' representatives.

Officiating as hosts were Jacob G. Goldberg, president; Arthur A. Marcus, treasurer; Julius S. Goldberg, secretary; Andrew J. Gregg, purchasing agent; and Joseph Bloom, manager of Radiant Burner Supply Corporation.

Guests were conducted through the company's new building, containing 100,000 sq. ft. of space on two floors. The firm started business in 1923 in 750 sq. ft. of a store at 215 Bay 20 St., and now occupies its own building extending from Eighteenth Ave., through the block to Bay 19 St., where there are loading platforms for twelve trucks.

Company Formed By Refinery And Three Farm Cooperatives

AN INDEPENDENT OIL REFINERY and three eastern farm cooperatives recently joined to set up Petrol Refining, Inc., operating a plant at Texas City, Tex. Partners are Petrol Terminal Corp., headed by E. M. Callis, Baltimore, and the Southern States Cooperative, Richmond, Va.; Pennsylvania Farm Bureau Co-op Association, Harrisburg, Pa. and Cooperative Grange League Federation Exchange, Ithaca, N. Y. President and general manager is Mr. Callis. Other



YOU can be sure of customer satisfaction when you install Vent-Rite Non-Vacuum Venting Valves. They are specially designed to give more efficient, uniform heating with one-pipe steam systems.

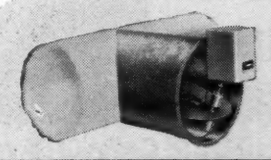
These Non-Vacuum Vent-Rites are adjustable individually so that each radiator receives just the right amount of steam. Positive thermofloat action automatically regulates opening and closing of valve.

It will pay you to specify and install Vent-Rite Non-Vacuum Venting Valves . . . the original adjustable valve. Write for prices and full information.

Anderson Products, Incorporated
Cambridge 39, Massachusetts

Smooth Operation

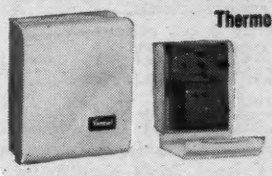
Depend on Sampsel automatic Controls for accurate and flawless operation. They assure finest possible performance from the heating equipment you build or sell. Sampsel engineering consistently brings you basic developments in heating controls *first;* Sampsel precision manufacture guarantees dependable quality.



Sequence Draft Control

Lets you offer your customers savings of up to 30% on fuel oil! Easily and economically installed on any oil-fired domestic furnace or boiler.

Sampsel Engineering puts you out in front



Thermo-Interruption Stoker Fire Pilot

Performs normal fire pilot functions *and more!* Permits burning coals formerly unsuitable for stoker firing; saves fuel; reduces service and adjustment calls.

Write for catalog describing the complete line of Sampsel automatic Controls for gas, coal or oil-fired heating equipment.

Sampsel Time Control, Inc.
Spring Valley, Ill.

Sampsel
AUTOMATIC CONTROLS

for MORE profits, LESS servicing, SELL Sampsel

officers are: Chairman of the board, W. G. Wysor, former general manager of Southern States Cooperative; First vice-president, V. A. Fogg, Ithaca, head of Farm Supplies Div. of G.L.F.; Vice-presidents, F. F. Sweeton, Philadelphia and V. W. Smith, Texas City; secretary, Wilmer G. Williams, Philadelphia and treasurer-comptroller, J. W. Presson, Baltimore. Board of directors consists of three members from each organization participating, including the president, chairman of the board and vice-presidents.

Petrol Refining, incorporated in Delaware, with headquarters in Baltimore, has a current production of 17,000 barrels a day, and operates three T-2 tankers, with a total capacity of more than 15,000,000 gallons.

Sherwood Bros. Wins Fifth Safety Award

FOR THE FIFTH TIME in ten years, Sherwood Bros., Inc., Baltimore 3, Md., was the recipient on August 19 of the Interplant Safety Award from the Baltimore Safety Council. Given for the best safety record achieved by a petroleum company in the past year, the award was made in a brief ceremony before an assembly of Sherwood office workers. J. W. Sherwood, president of Sherwood's board of directors accepted a framed certificate presented by Mr. McVicar, vice president and chairman, Industrial Committee of the Safety Council.

Others present at the ceremony included C. W. Keller, Jr. and Felix Jasper, of Sherwood Bros., and credited with being directly responsible for achieving the safety record which prompted the award. The company previously won similar recognition in 1937, 1938, 1939 and 1943.

Fed up WITH FUEL OIL PUMP PROBLEMS?

AT LAST - WE CAN NOW OFFER YOU A NEW PRINCIPLE PUMP COMBINING DEPENDABILITY - TOP PERFORMANCE - LITTLE OR NO SERVICE - MODERATE PRICE - QUALITY BUILT.

THE PENTWATER TRADE MARK WHIRL-A-JET

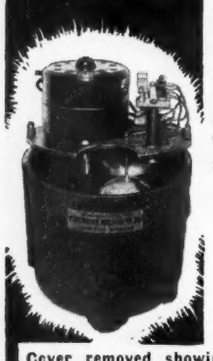
TREMENDOUS CAPACITY Will pump over 10 gal. per hr. running continuously. Handles all present range, space heater, water heater and gravity furnace requirements. Equal to sudden extreme loads. Large 3 pt. reservoir.

RAPID RECOVERY due to powerful vacuum created by Whirl-A-Jet design. Fills 3 pt. reservoir bowl in seconds.

EXTRAORDINARY POWER Easily overcomes vapor locks, air pockets, or dirt impediments in supply line. Primes itself quickly and surely regardless of size of fuel lines. Long lines or unusual bends in lines NOT a hazard.

EFFECTIVE SALES AID Handles No. 3 grade oil equally as well as all other grades. A superior sales feature for economy minded consumers. Because of Whirl-A-Jet dependability your casual purchasers become permanent contract customers.

QUALITY BUILT Rugged cast housing. Heavy duty, fully encased motor. Mercury control switches. Bi-metal thermal control for motor protection. Automatic Disabler incorporated into design of pumping unit. Sealed metal floats. Base or bracket mounting.



Cover removed showing encased motor, terminal plate, mercury and bi-metal switches & floats.

AVAILABLE IN 2 MODELS

MODEL A — With mercury safety switches instead of return overflow provision $35.00

MODEL B — With return overflow provision instead of mercury safety switches $33.50

Substantial discounts allowed dealers, distributors and manufacturers. Information available upon request.

PENTWATER MACHINERY COMPANY
PENTWATER, MICHIGAN

Allied Oil Dinner Honors Former Owners

MORE THAN 120 employees of Allied Oil Co., Inc., Cleveland Tankers, Inc. and Central Pipe Line Co. held a testimonial dinner at the Cleveland Hotel on August 20 in honor of W. W. Vandeveer and F. R. Newman, former owners of Allied, recently merged with Ashland Oil and Refining Co. On August 21, the annual outing was held.

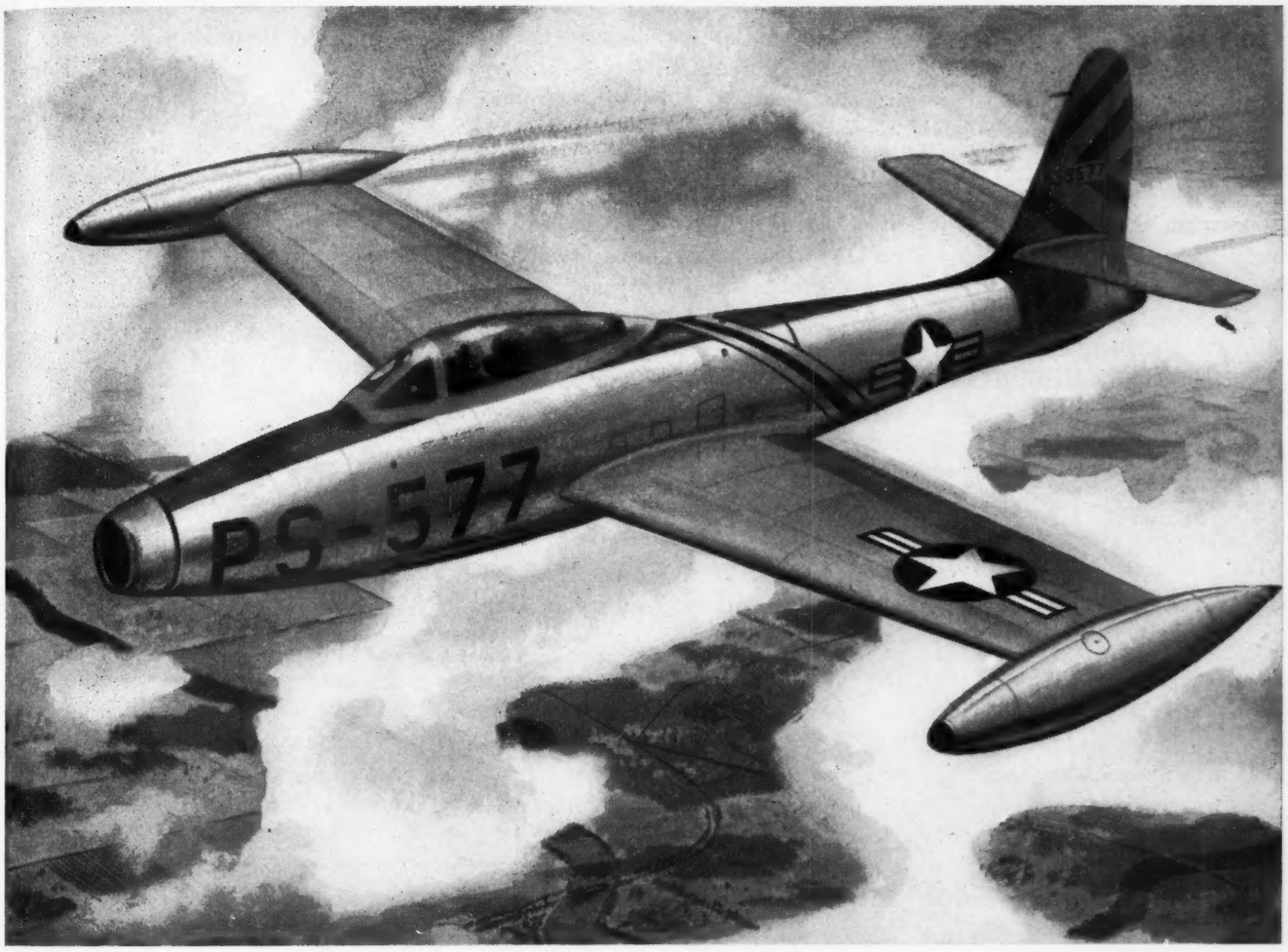
Guests at the dinner included Paul G. Blazer, chairman of the board; J. Howard Marshall, president and Everett F. Wells, vice president, Ashland Oil & Refining Co. Rexford S. Blazer, new president of Allied, was toastmaster.

U. S. Radiator Moves Its Baltimore Branch

THE BALTIMORE branch office of United States Radiator Corp., Detroit, Mich., was moved into larger and more modern quarters late in August, according to V. W. Blackney, director of sales, Distribution Department. The branch, now located at 139 Fallsway, has approximately 50% more floor space than was available at its former location on North Charles St.

Sales Campaign Features Plug-In Chronotherm

AN EXTENSIVE promotional program, undertaken by Minneapolis-Honeywell Regulator Co., Minneapolis, Minn., will feature the company's plug-in Chronotherm, according to Arthur H. Lockrae, vice president. The advertising and sales promotional program, to involve an initial expenditure in excess of $200,-



Fuel for the Jet Plane- FUEL FOR YOUR SPARK!

Unlike oil heaters limited to the use of one or two types of fuel oil, SPARK oil heaters give clean, efficient heat with FOUR TYPES OF FUEL OIL:

- ***No. 1 oil or kerosene*** **(similar to the fuel used by jet planes)**
- ***No. 2 oil.*** • ***No. 3 oil.*** • ***Motor diesel oil.***

Last winter, for example, SPARK heaters using common motor diesel oil provided thousands of homes throughout the nation with clean, satisfying warmth!

SPARK dealerships available. Write for information.

SPARK OIL BURNING HEATERS

A product of
SPARK STOVE CO., INC.
OAKLAND 1, CALIF.

SPARK Stove Co., Inc., Dept. E-10
2619 E. 12th St., Oakland 1, Calif.

Gentlemen: Please send me complete information on SPARK oil burning heaters and your SPARK dealer plan.

*Name*_____

*Firm*_____

*Address*_____

*City*_____ *State*_____

fueloil & oil heat

000, will be based on a new slogan, "The Clock That Says a Warm Good Morning." National consumer publications, such as *Saturday Evening Post* and *Collier's,* as well as the four largest shelter magazines, will carry advertisements, supplementing the full schedule of trade magazine advertising already under way.

A concentrated direct-mail campaign, directed at wholesalers and dealers, will be employed to coördinate the entire program, while bi-monthly sales letters will inform dealers how to use the free sales aids available. These include envelope enclosures, counter displays, brochures and newspaper mats.

Long-Time Employees Honored By Mueller

PERSONNEL who have been with the company for more than thirty years recently were honored by the L. J. Mueller Furnace Co., Milwaukee, Wis. Thirteen individuals who qualified were presented with handsome gold wrist watches by president H. P. Mueller.

The recipients, whose service with the Mueller organization totals 462 years, were: J. Herman Bolzinger, Order Dept., 46 years; Henry Hotten, Engineering Dept., 46 years; Eugene Stemper, Purchasing Dept., 39 years; Ernest Liessmann, Sales Dept., 36 years; Martin Miholic, Maintenance Dept., 36 years; Thomas Brice, Sales Dept., 35 years; Robert Rosebrough, Sales Dept., 34 years; Rudolph Kollatz, Shipping Dept., 33 years; Frank Lewandowski, Mounting Dept., 33 years; Alex Chmielewski, 32 years; Frank Zolinski, Foundry Dept., 32 years; John Witkowski, Shipping Dept., 31 years; John Pieczynski, Mounting Dept., 30 years.

Stokol Stoker Company Moves Factory to Dayton

EFFECTIVE October 15, Stokol Stoker Co. announces it will move from its present Indianapolis location and will be located at 1600 Webster St., Dayton, Ohio. The firm manufactures a complete line of Stokol automatically fired equipment, including conversion oilburners, oilfired water heaters, boiler and furnace-burner units.

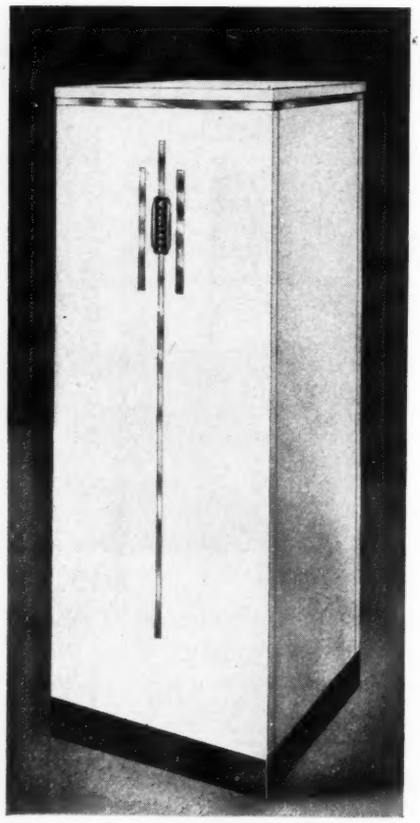
Pedigreed Bull Pup Is Mack Door Prize

ANOTHER pedigreed bull pup has been offered by Mack Trucks, Inc., New York, N. Y., as a door prize at the 15th annual ATA convention, held in Washington, October 8 to 13. Each person registering for the convention received a numbered entry blank, to be filled in and deposited in a ballot box. A drawing to determine the winner of "Mack" was held during the evening of October 10 at the Armory, official convention meeting place.

Hajoca Completing Philadelphia Branch

THE NEWEST ADDITION to the branch offices of Hajoca Corp., Philadelphia, Pa., is the warehouse and pipe fabricating plant nearing completion at 2nd St. and Erie Ave. The building, which will replace its present branch at 9th and Poplar, is one of thirty-one branches, located along the eastern seaboard.

The new building, containing 118,000 sq. ft. of warehouse, manufacturing, display and office space, includes



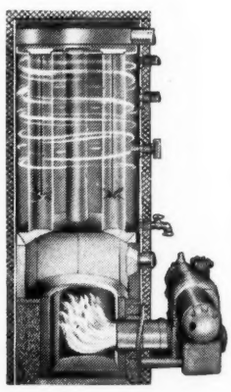
The

ELECTROL

WATER HEATER

A compact self contained unit made in two sizes. The domestic hot water recovery is 80 to 120 Gals. per hour. Auxiliary tanks up to 400 gallons may be connected to the unit.

The Unit will serve equally well as a competitive heating boiler with capacities to 500 Sq. Ft. radiation. Dimensions—2' x 2' x 5'.



ELECTROL BURNER MANUFACTURING CO., INC.
22 UNION AVENUE
RUTHERFORD, NEW JERSEY
Rutherford 2-8300

Why there are no Better Boilers than SPENCER

- HIGHEST QUALITY MATERIALS
- ENGINEERED—DESIGNED AND BUILT TO THE MOST EXACTING STANDARDS
- SKILLED BOILER WORKMEN
- SPENCER CARRIES ON THEIR BOILER RESEARCH AND DEVELOPMENT WORK IN THEIR OWN FULLY EQUIPPED LABORATORIES

Smart Heating Engineers and Experts

SPECIFY SPENCER

EVERY SPENCER BOILER is designed for ease of installation—no wasted labor—no hidden costs. Spencer Boilers are engineered for maximum efficiency . . . all working parts are accessible—easy to maintain and no trouble calls.

One of the oldest names in the heating industry and now a proud member of the AVCO family, Spencer manufactures a complete line of cast iron and steel tubular boilers. There is a size and type Spencer to meet every heating requirement—for every type of fuel. You'll find no higher regard than the buying public has for Spencer Boilers.

***So* . . . for your protection, Mr. Heating Expert, sell and specify Spencer.**

I=B=R REG. U.S. PAT. OFF. FULLY APPROVED

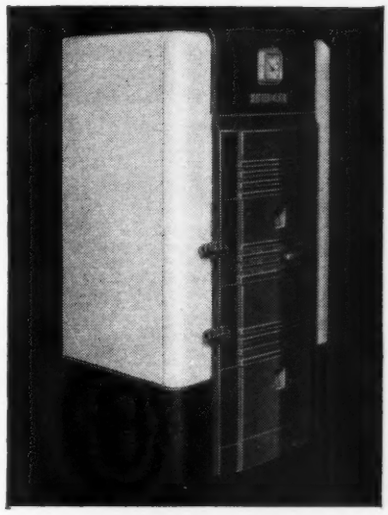
FULLY APPROVED Built in accordance with ASME Code Insurance Inspected SBI

IT'S ANOTHER AVCO PRODUCT!

SPENCER HEATER

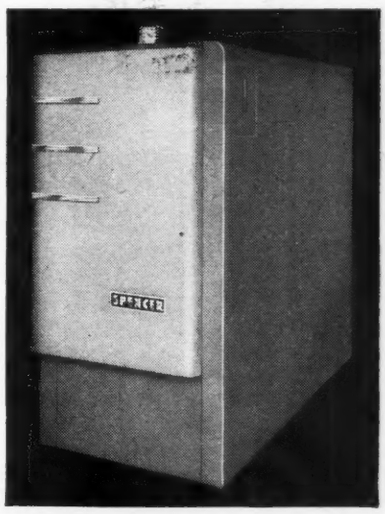
DIVISION—AVCO MANUFACTURING CORP., DEPT. FF-5, WILLIAMSPORT 2, PA.

fueloil & oil heat



THE NEW SPENCER SERIES "21"

Designed to burn any type of fuel—easily and quickly converted. Year-round domestic service hot water. A sectional boiler designed with iron to iron air tight fit. Attractive jacket combined with modern design door assembly featuring glass observation ports.



FAMOUS SPENCER SERIES "C"

Steel Heating Jacketed Boiler for homes and smaller commercial buildings. For mechanical or hand firing—easily and quickly converted. Features include easy accessibility for cleaning—precision ground water cooled flue and fire door frames. Available with year-round domestic hot water heating method.

facilities capable of fabricating steel and alloy pipe up to 24" in diameter. The branch also will be service headquarters for Hajoca's oilburner division. Approximately half of the first floor Erie Ave. frontage consists of a bank of display windows, and a huge replica of the company's "William Penn" trademark atop the building constitutes another striking display feature. Hajoca distributes a complete line of plumbing, heating, refrigeration and industrial equipment, manufactures a number of items, including a domestic oilburner.

Dwyer Bulletin On Combustion Test Sets

BULLETIN NO. 220, prepared by F. W. Dwyer Mfg. Co., Chicago, Ill., describes its lines of combustion test sets, showing their components and explaining their purpose and use. Basically, the set includes a new style CO_2 indicator, a small Visi-Draft gauge and a pencil type stack thermometer, which, with the accessories, permits all necessary combustion test sets to be made.

Other combinations available afford the user a choice of various draft gauges and stack thermometers, in addition to a smoke gauge, which provides an actual sample of smoke drawn through a square of test paper and permits comparison of the stained paper with smoke density charts. The bulletin is printed in red and black. Its four pages contain illustrations of the complete sets and views of individual parts.

Dole Offers Literature On Automatic Register

DOLE thermostatic air controls are discussed in a small folder which the Dole Valve Co., Chicago 12, Ill., is offering, with imprint, to dealers. They are suitable for use as envelope stuffers and contain illustrations, showing the automatic warm air registers in place on typical installations. Brief explanation is included to show how the thermo-dial on the registers adjusts a built-in thermostatic element, which actuates the dampers controlling the volume of heated air entering the room. This permits selection of any desired room temperature and enables the entire warm air heating system to be balanced or equalized.

A 4-page folder, also available, contains design data for new installations and similar information to facilitate application of the registers to existing systems. Physical data and specifications also are listed.

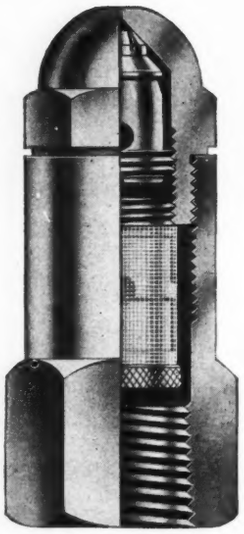
Coleman Acquires Indiana Factory

PURCHASE of the LaPorte, Ind. factory of Hoosier Industries, Inc., has been announced by Coleman Co., Inc., Wichita 1, Kan. A complete line of automatic water heaters, both oil and gasfired, will be produced. Lee P. Corsbie, president of Hoosier, has been retained as manager.

U. S. Radiator Names Five Man Advisory Board

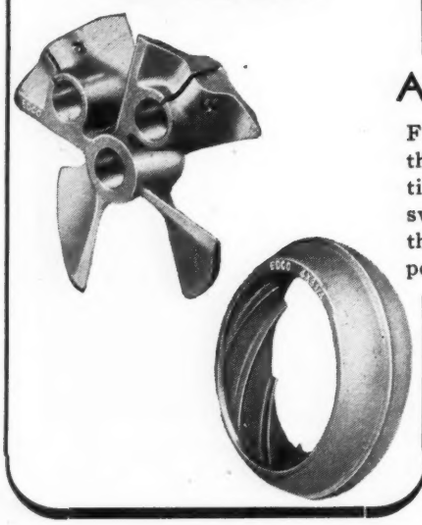
A FIVE MAN ADVISORY BOARD, named by United States Radiator Corp., Detroit, Mich., is intended to consider all matters of product selection and major merchandising and distribution policies on a company-wide level. All members of the Board are branch managers for the company. They are: A. F. Westerfield, southern branch, chairman; T. R. Flanagan, New York, secretary; G. R. Hickman, Boston; R. F. Milward, Detroit; D. E. Welsh, Philadelphia.

Here's SURE-FIRE Equipment



OIL BURNER NOZZLES

Edco's standard oil burner nozzles are universally recognized as the finest of their kind obtainable. Skillfully made and individually tested for spray angle, atomization and actual rated capacity. Large capacity Monel strainers make cleaning seldom necessary.



AIR CONES—STABILIZERS

For higher CO_2's—The Stabilizer holds the electrodes and nozzle in firm position while the twist of the fins gives a swirl to the air flow which is carried through by the air cone at just the right point for mixture with the nozzle spray.

EDCO

EDDINGTON METAL SPECIALTY CO.

P. O. BOX K, EDDINGTON, PENNA.

GET MORE HEAT WITH LESS OIL IN LESS TIME—

UNRETOUCHED PHOTO

THE HARVEY OIL BURNER With the Famous SHELL Designed COMBUSTION HEAD

3 MODELS

SH-1 — ¾ to 1.75
SH-2 — 2.00 to 3.00
SH-3 — 3.00 to 6.00

Underwriter laboratory approval
CS 75-42 approval

Definite PROOF of SAVING within an hour

KNOW WHAT YOU'RE SAVING ON THE FIRST BURNER CYCLE

The Harvey Oil Burner burns more economically than the conventional burner.

You do not have to take our word for it—you can prove it yourself on the very first cycle, when the Harvey Burner is used as a replacement.

Simply time the old burner before removing it. Install the Harvey Burner using the *next size smaller nozzle* and time it again.

Test after test has shown that the Harvey raises heat *faster* with a *lower* firing rate.

To find your saving, multiply the difference in nozzle sizes by the number of hours your burner runs each year.

The number of hours your burner runs each year depends on the climate and the construction of your house. A fair average is 1,000 hours.

Thus by saving ½ gallon of oil per hour, which is a very common saving, you will know that your annual saving will be 500 gallons.

BURNS CLEAN TOO—

But that is not all. The Harvey Burner burns even the catalytic cracked oil *without the slightest trace of smoke, soot or odor.*

With no layer of soot to insulate the inside surface of the boiler, cost is further reduced and expensive periodic cleaning of boiler and chimney eliminated.

ENGINEERED FOR PERFECTION

The Harvey Oil Burner is a NEW burner *designed and engineered especially* to get the utmost from the Shell designed Combustion Head after over 3 years of laboratory and field tests. It is not just another burner on which a Shell Head has been installed.

IN PHILADELPHIA
Sid Harvey of Pa., Inc.

IN BOSTON
Sid Harvey of Mass., Inc.

IN NEWARK
Sid Harvey of N. J., Inc.

IN WASHINGTON, D. C.
Sid Harvey of Md., Inc.

SID HARVEY INC.
VALLEY STREAM, NEW YORK

BRANCHES: 138-76 QUEENS BLVD., JAMAICA. 909 MAIN ST., NEW ROCHELLE. 1823 STRATFORD AVE., BRIDGEPORT, CONN.

IF YOU PREFER TO ORDER HARVEY PRODUCTS AND REPAIRS THROUGH YOUR LOCAL JOBBER — SEND US HIS NAME.

fuel oil & oil heat

Everyday Snags

Automatic Deliveries

It's been recognized for years that the K-System of Automatic Fueloil Deliveries, on which we published the original instructions which started thousands of fueloil suppliers making automatic deliveries, simply does not work perfectly during mildly cold weather when on chilly mornings one customer uses oil for heating while his neighbor uses none.

One home, well-insulated and with windows tight-closed, has dropped to only 70° at 7 A.M. on a day when it's 55° outdoors, and thus needs no heat. But the loosely-built house next door, perhaps with bedroom windows raised to top things off, has dropped to 60° the same morning and certainly needs heat. One home owner keeps his thermostat at 55° all summer, while his neighbor finds 68° a better setting. One house is heated quickly by the first sun rays of a borderline morning, while another must burn oil for comfort because it gets no sun heat. One home is heated on mild days by Btu's coming upstairs from a big summer-winter water heating layout, while another gets no comparable heat, having a little well-insulated water heater or no heater.

For these and other reasons, on many spring and fall mornings some customers use appreciable oil for heating, while others use no oil.

There's no telling from the office, unfortunately, which customers use heat on such mornings and which don't. During a stretch of borderline weather, therefore, when these factors are multiplied, the K-System does not give the accurate results which it does during the colder, more important parts of the heating season.

During the past spring and early summer, in many cities the weather has been unseasonably chilly and has included long stretches of borderline days. This will give many K-System operators more difficulty than they've ever had before in getting ready for accurately-scheduled deliveries next fall and winter.

You can do this to offset these difficulties and get started properly next fall. Starting now, make a point of getting data whenever you can on the amount of oil in a customer's tank. If a customer calls at your office or telephones, make certain to tell him you want to know the amount of oil in his tank. Ask him to check it and telephone you. If anyone from your company calls on a customer, perhaps a salesman, fueloil truck driver, or burner service man, make certain he obtains a reading of how much oil is in the tank. Keep good notes on the readings and the dates, and when fall comes you can use these to simplify greatly your problems of starting your heating season automatic deliveries.

* * *

Air-Bind a Radiator

The basement expansion tank installed as part of a modern, complete closed-type hot water heating system is used for a good reason. The compression and expansion of the air trapped in the tank, occurring when the temperature of the system is raised and lowered, permits the water pressure in the system to stay within reasonable limits. The result is that water is not expelled from the system (through the pressure

KEEP HOME FIRES BURNING BRIGHTER!

with "NO-SLUDGE" Fuel Oil Treatment

Impaired combustion, congested fuel lines, and a low output of heat, can usually be traced to an accumulation of sludge in the fuel tank. Sludge forms on the premises and is beyond the control of the refiner. Unless proper steps are taken to disintegrate the layer of sludge—and to prevent it from forming, there will be thousands of heat units lost per every gallon of oil used.

"NO-SLUDGE" Fuel Oil Treatment chemically emulsifies any sludge in the tank. Its continued use prevents new sludge formation. "NO-SLUDGE" puts sludge in suspension—makes it burn with the oil. It clears fuel lines, makes oil flow freely—increases the number of B.T.U.'s, prevents breakdowns and holds service-repair work to a minimum.

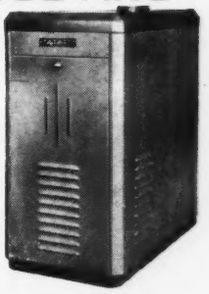
Servicing the home owner with "NO-SLUDGE" is profitable. One QUART of "NO-SLUDGE" treats 2000 gallons of oil.

Qualified Distributors Wanted
Write to Department F

Dominion CHEMICAL CO., Inc.
WATER CONSULTANTS AND CHEMISTS
FOR INDUSTRIAL AMERICA
11 WEST 42nd ST. · NEW YORK 18, N. Y.

SEND TO-DAY FOR COMPLETE DETAILS ON

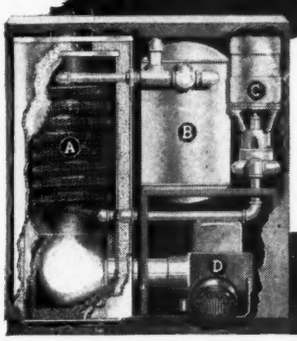
Aqua-Finn AUBURN BURNER Co's HEATING WONDER A Modern Miracle FOR PERFORMANCE AND ECONOMY . . .



Everything a boiler should have is incorporated in the Auburn Aqua-Finn—Beauty—Quality—Simplicity in design and construction—Outstanding performance—Dependability—Economy (The application of finned copper tubing cuts fuel consumption up to 33%). Here is a unit that supplies heat for hot water and hot air split systems plus domestic hot water. It is really a marvel.

Write or wire for literature and prices. Dept FO.

AUBURN BURNER CO. AUBURN, IND.



COMPACT COMPLETELY PACKAGED

OIL OR GAS BURNER • BOILER • EXPANSION TANK CIRCULATOR • INSTANTANEOUS HOT WATER UNIT

A — Instantaneous Aqua-Finn copper heat exchanger. An exceptionally efficient unit.

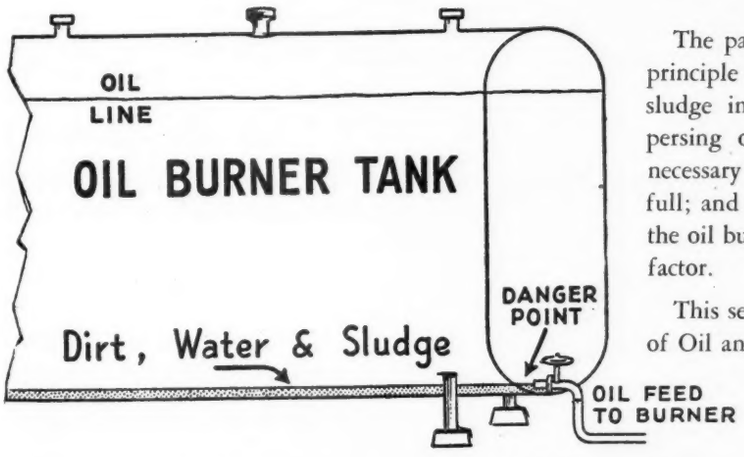
B — A copper combination domestic water storage and safety expansion tank.

C — Automatic water circulating pump. A small volume of water is needed for this system.

D — Auburn automatic oil or gas burner. There is a size unit for all requirements.

COPPER CONSTRUCTION
EFFICIENT • ECONOMICAL ★

Tank Cleaning Without Waste



The patented "VISA-CLEAN" method employs the principle of completely removing the dirt, water and sludge instead of putting them in supension, dispersing or attempting to dissolve them. It is not necessary to remove the oil even though the tank **is** full; and there is no interruption to the operation of the oil burner which, in cold weather, is an important factor.

This service is offered through the recommendation of Oil and Oil burner companies, at no cost to them, advising their customers of this service.

Write or telephone us in any of the following cities:

NATIONAL TANK CLEANING CO.

BALTIMORE: 4800 Wabash Ave., 15 Lexington 3785
PHILADELPHIA: 427 West Queen Lane, 44 Tennessee 9-8185
NEW YORK: 164-04 Northern Boulevard, Flushing, L. I. Independence 3-2250
BOSTON: 41 Baxter Street, Quincy 69, Mass. Granite 2-0428

relief valve) each time the boiler temperature reaches maximum, and additional water from the cold water supply line to the system is not admitted by the automatic feed valve each time the system becomes stone cold. The idea of using the basement expansion tank is, of course, to gain the advantages of keeping the same water in the system throughout the year.

Where to cheapen the heating system a basement expansion tank has been omitted from it, a dribble of water from the pressure relief valve is expected when the boiler temperature is raised considerably by running the oilburner. This dribble can be ended in most systems by intentionally air-binding or failing to vent properly one or more radiators. The air you leave in the radiators takes the place of the air which should be trapped in a basement expansion tank. This trick can help you prove to a skeptical home owner that he needs a basement expansion tank to stop the dribbling of his pressure relief valve. Where an owner anxious to save oil has a radiator which is not needed to heat the room it occupies, that radiator can be kept air-bound to save oil and prevent rapid deterioration of the heating boiler and heating system until the needed basement expansion tank is installed. Although the dribble of hot water from a relief valve often impresses an owner greatly because of its fuel-wasting possibilities, actually in most cases the dribble should be stopped mainly to prevent rapid deterioration of the heating boiler and heating system, and to stop the overworking of the relief valve which may wear it, preventing it from ever closing tightly. Once worn so that it gives out a steady stream of water, a relief valves does cause a tremendous waste of fueloil.

* * *

Cost of Hot Water

To estimate the cost of summer hot water produced by a summer-winter hot water layout, figure that on the usual installation in summer the burner may operate a total of two hours a day, whereas on the unusually efficient installation the burner will run a total of only one hour a day. In evaluating the efficiency, take into account the effectiveness of the boiler insulation and the CO_2 and stack temperature readings.

On this basis, an ordinary installation fired 1.0 gph will use two gallons of oil per day in summer for water heating; an uncommonly efficient installation fired 1.0 gph will use one gallon.

* * *

Smoother Starting

Where an automatic horizontal rotary cup oilburner tends to give a starting puff which blows smoke and oil vapor out of the secondary air openings in the bottom of the firebox, usually you can obtain smooth starts by drilling out the port which meters the amount of gas for the gas-electric ignition system. Be careful not to make the burner use tremendous amounts of additional gas for ignition; increasing the gas pilot rate by 50% to 100% probably will end the trouble and wind up with gas consumption increased so slightly that the owner has no objections to the increase. If costly bottled gas is used, consult the owner before you use a larger gas jet, and make doubly certain you increase judiciously.

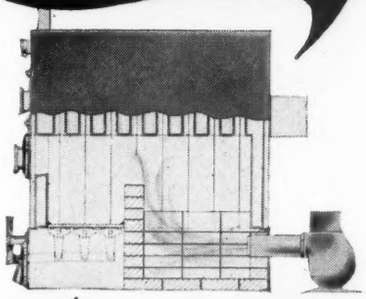
BETTENDORF BURNERS

More Bettendorf Burners were produced and sold in 1947 and so far in 1948 than any other burner on the market. This acceptance of Bettendorf Burners is due to efficiency of operation and trouble free performance. Also, this is the result of accuracy in manufacturing and rigid inspection. For profitable sales and satisfied customers, specify Bettendorf Burners.

BETTENDORF OIL BURNER CO.

MARSHALLTOWN, IOWA

FUEL SHORTAGES or POWER FAILURES



. . . mean nothing to this new boiler!

Presenting

The SMITH-MILLS RELIANCE for larger homes

Even the best automatically-fired boiler is subject to power failures, strikes, or curtailed fuel delivery or supply. Acknowledging this, H. B. Smith has designed a boiler for both normal and emergency operation. *If for any reason either fuel supply or electric power fails, the Smith-Mills RELIANCE still maintains heat in the home.*

An emergency grate makes this possible. With it, a *coal or wood* fire can be maintained by hand firing to give ample heat and domestic hot water as long as they are needed. Yet this arrangement in no way lowers boiler efficiency during automatic firing.

• • •

THE SMITH-MILLS RELIANCE IS NOT FOR *EVERY* HOME. But it is bound to have wide acceptance among those home owners who can afford the utmost in convenience and reliability. This in turn means bigger profits for the contractor, unequalled client satisfaction for the architect.

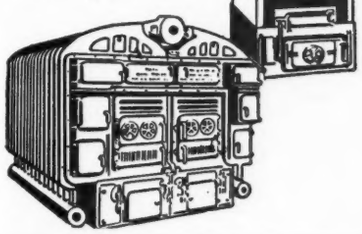
H. B. Smith

CAST-IRON BOILERS

THE H. B. SMITH CO., INC.

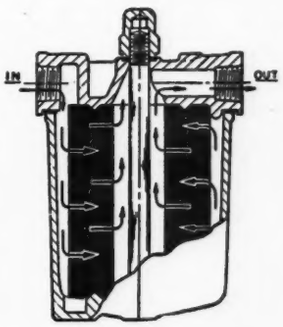
68 Main Street
Westfield, Mass.

Offices and Representatives in Principal Cities



One Filter KEEPS INVENTORY DOWN

One model of Cuno MICRO-KLEAN Oil Burner Filter handles all domestic installations. Result—REDUCED INVENTORY.



PERFORMANCE

SATISFIES USERS

Graded Density in Depth" of micronic-fibre cartridge plus resinous impregnation doubles dirt-collecting capacity, eliminates channeling. Result—USER SATISFACTION.

Cuno MICRO-KLEAN Filters and replaceable cartridges are manufactured by the company whose filters are used more often in industry than any other brand. Standard replacement cartridges fit many other oil burner filters already installed.

NEW DISPLAY

GETS NEW BUSINESS

Red-blue-and-black counter display, with cut-out for actual product and pocket for sales literature, attracts attention and sells for you. Result—MORE, EASIER SALES.

FOR FREE BULLETIN, ATTACH COUPON TO YOUR LETTERHEAD

CUNO

Fluid Conditioning

Removes More Sizes of Solids from More Types of Fluids

Cuno Engineering Corp.
858 South Vine St., Meriden, Conn.

Please send information on Cuno MICRO-KLEAN Oil Burner Filters and replacement cartridges.

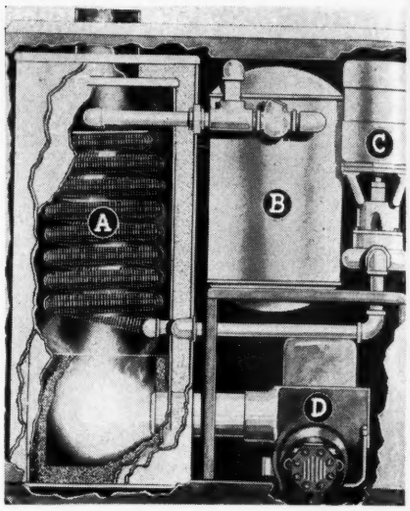
Name .....
Title .....
Company .....
Address .....

New Products

Auburn Copper Boilers With Integral Finned Tubing

AQUA-FINN units, announced by Auburn Burner Co., Auburn, Ind., are copper boilers, incased in stainless steel, insulated and covered with a steel jacket. Fired with gas or gun type oilburners, the units feature the use of integral finned copper tubing, made from a solid round bar of copper, to increase heat conductivity. A stainless steel baffle plate and a ceramic-lined combustion chamber also are employed. Supplied as part of the unit, and located inside the jacket, are a combination copper domestic water storage and expansion tank and an automatic water circulating pump.

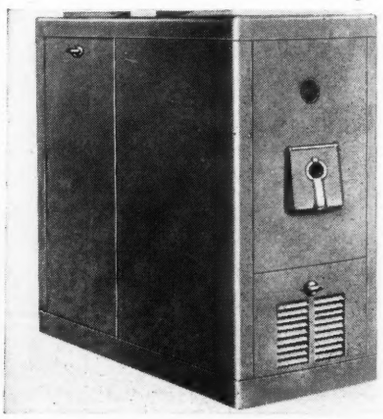
Seven sizes, three for oilfiring, range in capacities from 560 to 2200 sq. ft. hot water, total boiler output. Units provide heat through standard radiators or new type convectors, supply domestic hot water and can be adapted to heat air for warm air systems. In the latter case, secondary heat exchangers and blower



units, furnished in multiples of 30,000 Btu capacities, are used. Construction consists of integrally finned tubes in parallel banks. The coil can be located within the fan housing or any place within the duct and can be used with present warm air systems for summer cooling. Opening and closing three valves converts the unit to use for summer cooling. Individual convectors, also available, are small secondary exchangers, fitted with a fan, filter and Aqua-Finn radiator. Copper tubing runs from the boiler to each convector, which can be controlled with thermostats.

Toridheet ORA Furnace For Small Homes Field

TWO MODELS of all-steel winter air conditioning units, displayed by the Toridheet Div., Cleveland Steel Products Corp., Cleveland 2, Ohio, at heating and oilburner shows this year, now are in full production. Models ORA-60 and ORA-90, designed for the small homes field, are rated at 60,000 and 90,000 Btu/hr register output, respectively. Both employ model F rotary wall flame



THERE IS NO BETTER TRANSFORMER BUILT -- REGARDLESS OF PRICE

IMMEDIATE SHIPMENT OF STANDARD TYPES

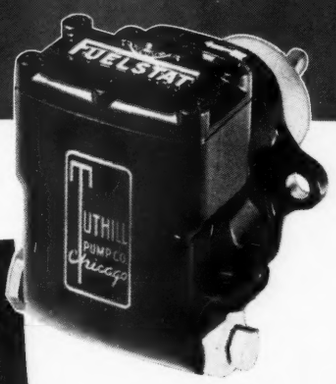
DONGAN ELECTRIC MFG. CO.
2981 Franklin Detroit 7, Mich.

The Dongan Line Since Nineteen-Nine

Write for NEW CATALOG

DONGAN TRANSFORMERS

ONLY TUTHILL HAS THESE 4 IMPORTANT FEATURES *in One Pump*



Burner A calls for a pump with clockwise rotation and right-hand nozzle port.

Burner B needs a pump with clockwise rotation and left-hand nozzle port.

Burner C requires a pump with counter-clockwise rotation and right-hand nozzle port.

Burner D uses a pump with counter-clockwise rotation and left-hand nozzle port.

Regardless of these varying requirements, all can be filled by the new Tuthill Model 30EN Fuelstat. Exclusive Tuthill features make it possible to fit the same Fuelstat to any one of these services —quickly and easily—in the field. The new Fuelstat is available for immediate delivery. Write for details and quotation.

TUTHILL PUMP COMPANY
939 East 95th Street, Chicago 19, Illinois

ALDRICH HEAT-PAK

OIL BURNERS

MODEL SAX

3 Models
5 Firing Ranges

Model SAX-1 (shown above) covers .75 to 1.35 gph, SAX-2 from 1.35 to 2 gph, and SAX-3 from 2 to 4.5 gph by interchange of draft tube assemblies. Model BX covers 4 to 8.50 gph and Model JU from 7 to 19 gph for larger installations.

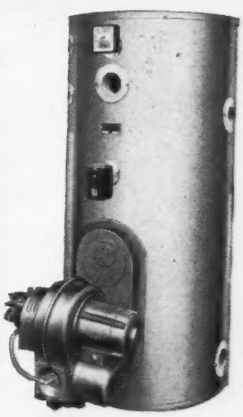
Featuring
ALDRICH-BUILT
Motors and Transformers

These efficient, well-built burners give reliable high performance. Made to serve all firing requirements from 3/4 to 19 gph. SAX models have interchangeable draft tube assemblies covering 3 ranges. Various length draft tubes are available, also either flange or pedestal mountings. Aldrich-built motors have continuous service-rating and transformers are radio interference-free. Burners are ideal for conversion, replacement, or original equipment.

ALDRICH HEAT-PAK

BOILER-BURNER UNITS

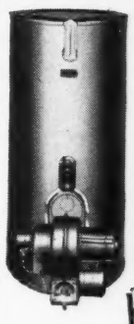
Featuring
BURNERS FOR OIL OR GAS
with Identical Ratings



These vertical fire-tube boilers are strongly built to highest standards of rugged welded construction. Give dependable, efficient performance on all types of steam or hot water heating systems. Six sizes cover capacities from 118,000 to 808,000 BTU per hour. Series B (shown) are oil-fired with Underwriters-approved Aldrich burners. Series BG are gas-fired with AGA-approved burners having ratings identical to corresponding oil burners. Both types of burners are on similar mounting plates for interchangeability. Efficient, high-delivery, double-spiral hot water coil available on specification. Many other outstanding features.

ALDRICH HEAT-PAK

HOT WATER SUPPLY UNITS



Featuring
FAST HEATING and LARGE DELIVERY
No Storage Tank Required

Ideal for use in residences, apartments, clubs, factories, and many commercial and industrial establishments. Same construction and features as Boiler-Burner units above, including interchangeable firing with either oil or gas. Capacities of six standard sizes range from 125 to 850 gph of water at 100 degrees rise. Complete set of automatic and safety controls furnished. Dress shell enameled beautiful Hammerloid blue with chrome trim rings. Many other features — see literature.

Write today for current literature giving complete specifications of all Aldrich products.

SOLD THROUGH JOBBERS
Aldrich products are distributed through established plumbing and heating jobbers, and are backed by an experienced sales and service organization. Investigate the value of handling the Aldrich line! Write us, so our nearest factory representative can call on you.

ONE OF THE BREEZE MARK PRODUCTS

ALDRICH COMPANY, 103 WILLIAMS ST., WYOMING, ILL.

A SUBSIDIARY OF THE BREEZE CORPORATIONS, INC.

oilburners, which operate in a welded boiler plate combustion chamber, and feature a heat exchanger of exclusive design. The steel cabinet, finished in baked enamel, is elevated above the floor on full length metal skids.

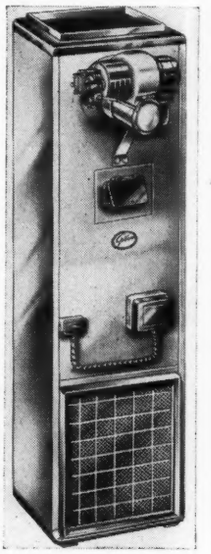
Units are shipped completely assembled, with approved control accessories and float-controlled humidifier as standard equipment. One 16 x 25 x 2 filter is furnished with model 60, two are provided with the larger size, with both equipped with a 1/6 hp. motor to drive 9" and 11" blowers. Normal cfm capacity is 720 for the smaller unit, 1080 for the larger. Additional sizes are expected to be produced during 1949.

Sanborn Air Swirlers In 4 to 5 Inch Diameters

SANBORN SYSTEMS, INC., Milwaukee 11, Wis., has expanded its line of fuel savers to fit burner tubes in the 4" to 5" diameter brackets. Sanborn Air Swirlers now are adaptable to nearly every domestic size of gun type oilburner, including draft tube diameters from 3½" to 5" I.D., capacity from .75 to 5 gph.

G & B Furnace Unit Is "Space Saver"

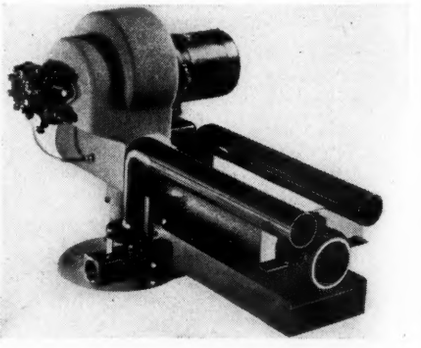
A NEW OILFIRED winter air conditioning unit, announced by Gilbert & Barker Mfg. Co., West Springfield, Mass., is designated the "Space Saver," occupying only 3½ sq. ft. of floor space when installed. Rated at 100,000 Btu capacity and designed for small homes use, it is fired with a Gilbarco GCS pressure type burner. The burner features the Economy Clutch, a patented action which starts the burner fan in operation before the oil is ignited and permits the fan to continue for several seconds after the flame is extinguished.



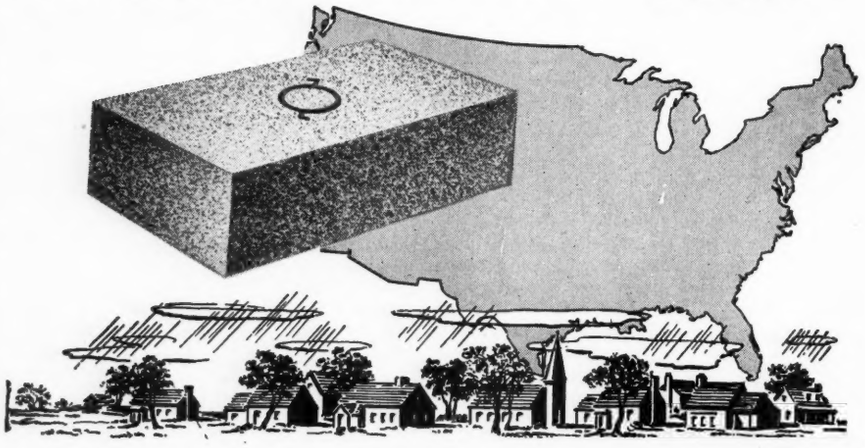
The "Space Saver" employs the counter-flow principle of heat transfer with transfer aided by the movement of hot combustion gases opposite to the flow of heated air. Units are shipped with burner and combustion safety control mounted and wired, a stainless steel combustion in place and the blower mounted and wired.

Junior Combination Oil-Gas Burner

JOHN C. JUNIOR CO., Kansas City, Mo., announces it is in production of a fully electronic controlled dual fuel combination oil and gas burner. Employing a high pressure gun type oilburner and an atmospheric inshot gas burner, the unit features one central control system. Electronic control utilizes both a flame and a ground rod to rectify and estab-



Let "A Quarter of a Million Families" Be Your Guide

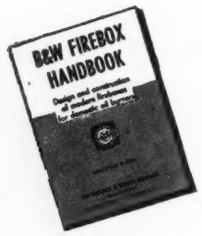


Yes, more than a quarter million families are getting oil heating comfort at a much lower cost because wide-awake and alert dealers have provided them with B&W Fireboxes.

This figure carries a vital sales message for you. It shows that dealers and customers all over the country recognize the advantages of B&W Insulating Firebrick. It proves that they are "sold" on the Fireboxes that —

1. Save fuel, due to more efficient insulation.
2. Minimize odor, soot and smoke.
3. Assure smoother, quieter burning.
4. Respond quickly to thermostat by reaching temperature quickly from a cold start.

Follow this lead to increased sales and profits—by showing your customers the benefits of B&W Fireboxes.



Send Today for the B&W FIREBOX HANDBOOK a sure guide to customer satisfaction and more sales.

R-298

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B&W 80 GLASS TANK BLOCKS • B&W INSULATING FIREBRICK
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For CONVERSIONS or NEW INSTALLATIONS

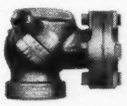
SELL *Triplex* HOT WATER HEATING AT ITS BEST!

Triplex dealers are fortunate. Whether the jobs at hand are conversions in old homes or new home installations, these men can sell *unvarying comfort* that results from *hot water heating at its best!* Here are the reasons why:

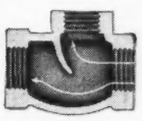
The advanced design and precision construction of all Triplex Flow Control Units assure the most efficient, dependable operation possible. Hot water is automatically circulated, abundant heat supplied to radiators instantly . . . whenever and wherever needed. Third floor north is just as comfortable as first floor south, for Triplex Units automatically balance heat loss with heat supply. Ample hot water for domestic use is also provided at practically no additional cost. In other words, the Triplex line enables you to talk and sell in terms of *hot water at its best!*

Learn more about Triplex Flow Control Units and what they can do for you. Write today for latest catalog and price sheet.

Direct Drive Circulators



Flow Control Valves



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Indirect Heaters

...SELL DRY BASEMENTS, TOO

Triplex Sump Pumps (centrifugal closed impeller type) are famous for trouble-free service. Easily installed. Movable float ball permits wide variation in sump depth. Specially tailored motor, with built-in float switch, operates automatically. *Available* in iron and steel or brass models.

Triplex

HEATING SPECIALTY CO., INC.
PERU, INDIANA

In addition to units illustrated, the Triplex line includes — Direct Drive Horizontal Circulators, Indirect Drive Circulators, Relief and Pressure Reducing Valves, Expansion Tanks, Air Eliminators, Water Mixing Valves, Air Vent Valves, Tankless Heaters, Control Units, Electrical Controls, Barometric Draft Dampers.

SEE YOUR WHOLESALER TODAY

Thru Bonus Buying

You make more money!

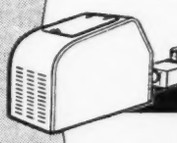
In 3 ways it makes sense to buy all your heating equipment from ANCHOR.

First, you'll earn quantity discounts. That's more money for you.

Second, you'll save time and trouble by dealing with one source for all heating equipment.

Third, you'll make sales easier, quicker . . when you offer your prospects a selection of every type of dependable equipment under one name . . Anchor.

Write today for complete facts and descriptive literature. Anchor Division, Stratton & Terstegge Co. Inc., P. O. Box 311, New Albany, Ind.



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Domestic . . . Commercial . . . Industrial Models for every building requirement.

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With Automatic Winter Air Conditioner.

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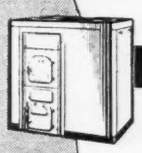
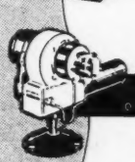
With Full Automatic Controls



ANCHOR AIRE

COAL FIRED FURNACE

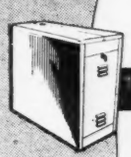
Round and square cased types . . . from small home-heating sizes to heavy duty models for industrial plants.



ANCHOR OIL BURNER

OIL BURNER

Fully Automatic . . .
The Ideal Conversion Unit.



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For Hot Water or Steam Tanks or Tankless.

Also manufacturers of
ROUND OAK Gas & Electric Ranges

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America's Finest Automatic Heating Equipment

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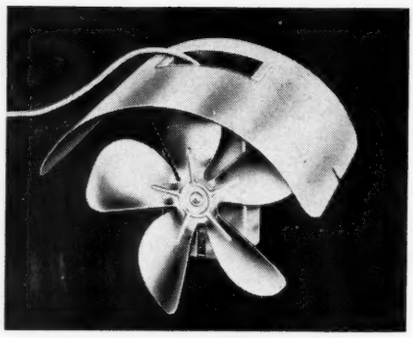
lish flame circuit. A sealed outside thermostat, set at a pre-determined temperature above the gas company's peak load, automatically changes fuel used. Available in three models, burners are rated from 70,000 to 700,000 Btu.

No pilot light is used, except in case of power failure where a standby pilot is provided. Normally, the ignition of the gas cycle is accomplished in a maximum of 2½ seconds by utilizing a dying oil flame, thereby proving the condition of the oilburner cycle on each start. Controls will fail safe in ½ second in case of flame failure.

McLarty Booster Fan Adds Five-Bladed Fan

ADDITION of a five-bladed fan and other changes in its ventilated booster fan has been announced by McLarty Systems, Battle Creek, Mich. The ventilating feature cools the motor bearings by drawing cool air from outside the warm air duct. Oiling, necessary only once or twice a year, is accomplished without removing the fan.

Installation requires the cutting of a 4½" x 8" hole in the side of the warm



air pipe, inserting the fan and securing it in place with two screws. It can be operated with a hand switch, room thermostat or furnace fan control. The fans are recommended to restore circulation in gravity air heating systems and to force heated air through long runs or to rooms that do not heat well. Its operation consumes no more electricity than a 25 watt light bulb.

Develop 200 Mesh Strainer For Small Apthorp Nozzles

A 200 MESH STRAINER, developed by Boston Machine Works, Lynn, Mass., for use in atomizing nozzles under 1 gph capacity, has been announced. Precision nozzles, rated at .65 and .75 gph capacity, now are offered at slight additional cost with the finer mesh strainer, when specified, in both 60° and 80° angle sprays. The additional cost results from the necessity to solder the strainers on both ends and on the seam to prevent the small ends of the very fine wire used in the 200 mesh from breaking off and causing nozzle failure.

Use of the finer mesh, it is said, removes many of the difficulties of plugging experienced with fractional gallon nozzles where 120 mesh strainers normally are supplied. The 200 mesh strainer will be furnished on orders for Apthorp nozzles only where specified.

Sinclair RD-119 Fluid Prevents Rust Formations

A FLUID, discovered by Sinclair Refining Co., New York 20, N. Y., now is being added to all Sinclair petroleum products as they flow through pipelines to distribution points to fortify them with an effective rust inhibitor. All the company's products, including kerosene and heating oil are being treated with

OIL BURNING EQUIPMENT

You Can Recommend with Confidence

FOR PERFECT HEAVY OIL BURNING UNDER ALL OPERATING CONDITIONS

Ace UNIFLOW OIL BURNERS

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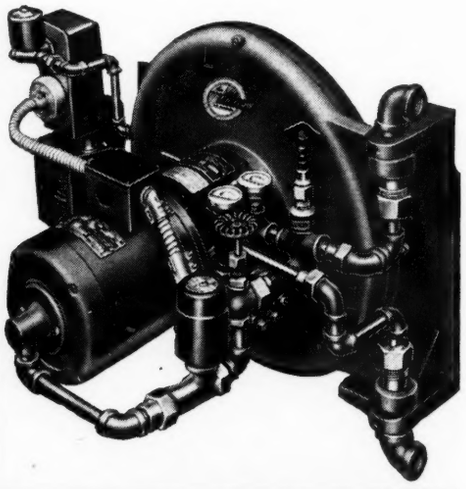

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A few territories are now open for responsible organizations. Write today.

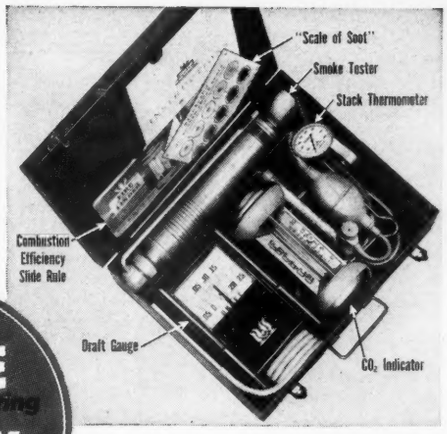
Capacity Ranges

	GALLONS PER HOUR	BOILER H. P.	SQUARE FEET STEAM RAD.
MINIMUM	2	6	800
MAXIMUM	165	500	64,000

ACE ENGINEERING CO.

1435 W. 15th Street • Chicago, Illinois

Custom Engineered Oil Burning Systems Since 1931



The **FYRITE** Combustion-Testing **UTILITY KIT** ... PACEMAKER FOR PROFITS from Expert Heating Service

Making the most of your ability to do an expert tune-up job will pay you big dividends in gaining you competitive leadership and neighborhood recognition of your competence as a heating expert. The combustion-testing kit shown here contains precision-made quality instruments with which you can make fullest use of your know-how in making a fuel conservation survey, checking a burner for wornout parts and needed repairs, or running an efficiency test to close a replacement deal.

The kit contains the well-known FYRITE CO_2 Indicator, the versatile MZF Draft Gauge, the all-metal TEMPOINT Stack Thermometer and the sensationally new TRUE-SPOT Smoke Tester. Now, for the first time, you can adjust an oil burner quickly and expertly for highest CO_2 without objectionable smoke . . . do away with guesswork, and "hit and miss" fumbling in adjusting for clean firing. The "Scale of Soot" which comes with the TRUE-SPOT tells you the limits of permissible smoke for various burners and types of heating systems. This amazingly simple method of oil burner adjustment is the greatest advance in combustion testing since the introduction of the FYRITE. You will be proud to be among the first to own this "up-to-the-minute" combustion-testing kit.

Price, at dealer's level, only $61.20.

TRUE-SPOT Smoke Tester only . . . . . dealer's net, $14.40.

For complete information on this and other new tune-up equipment—write for Leaflet 752.

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7000 Bennett Street - Pittsburgh 8, Pa.

PREFERRED
DRAFT-A-JUSTORS

Cut Fuel Consumption by 10% TO 30%

The *Preferred* Draft-A-Justor is the original, patented Draft-A-Justor . . . improved to include the latest in engineering developments.

Stainless steel bearings and weather resistant metals provide long-life service without breakdown due to rust or wear . . . assure *continuous* fuel savings.

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WRITE FOR DESCRIPTIVE LITERATURE AND TRADE PRICES.

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Stove, domestic and commercial sizes from 4" to 24" in diameter.

Industrial sizes from 2' x 2' to 5' x 12'.

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They'll be better SERVICEMEN READING →

THIS new, enlarged edition was prepared to meet the rising demand for the volume. As well as being a practical book for any serviceman to read once, it is in addition a good reference source for problems and a volume with which to bone up on things servicemen can forget.

It's a compilation of articles thoughtfully selected from Fueloil & Oil Heat.

Bound in heavy paper cover, 8½" x 11". There are 110 text pages and nearly 140 illustrations besides numbers of tables and short service hints

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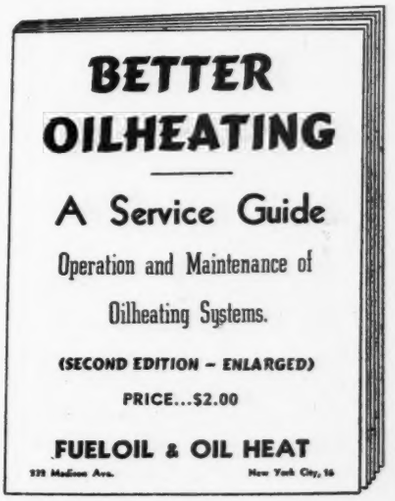

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For good service sake, get copies of this highly practical book, packed with basic knowledge. Covers major aspects of service. Not theoretical, as it's based largely on experiences.

fueloil & oil heat

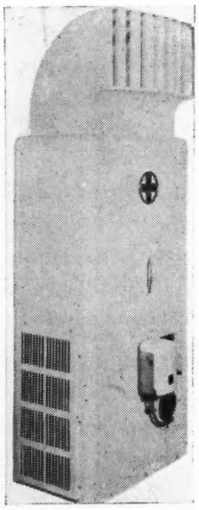
the additive, designed to keep domestic and industrial oilburning units free of rust and scale-clogged fuel lines and nozzles.

The product is described as providing an invisible, polymolecular protective layer which prevents the metal surfaces from coming in contact with air and moisture, preventing rust and corrosion of steel, zinc, aluminum and brass. Only a little more than 2½ gals. are required to give rust-preventing qualities to 42,000 gals. of product. RD-119 also will render rust and corrosion-proof storage tanks, tank cars and trucks, tankers and petroleum pipelines.

Patent applications covering the development of RD-119 have been filed and license arrangements soon will be available for use by other firms.

Evans Furnace Adaptable For Commercial Heating

MODEL 378 oilfired, forced air furnace, made by Evans Products Co., Plymouth, Mich., now is adaptable to commercial heating applications by addition of an accessory package. The package includes an overhead directional heat outlet and air intake safety grills, finished in white enamel to match the furnace. Eight movable vanes direct the heat where desired.

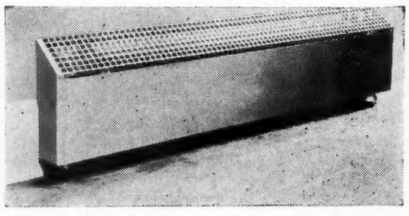


The furnace, with commercial heating accessories, has a gross output of more than 85,000 Btu's, featuring built-in blade type blower unit, and one control unit, containing automatic fuel control valve, fan and limit switch and summer air circulating control. Units are completely wired and assembled prior to shipment.

Rempe Convectors Are Wall Type Units

A LINE of wall panel type convectors, announced by Rempe Co., Chicago 12, Ill., can be used for new installations or to replace cast-iron radiators. The convectors consist of fins 3" wide by 6" high, with two steel tube circuits passing through the section, giving maximum heat transfer to the full area of the steel or aluminum fins. Convectors are made in sizes from 18" to 116" long, 8" high, 3" deep.

Fitted with a slanted cover, which will prevent objects being placed on top of them, units can be placed either above or in the baseboard. Effective radiation is provided through the square openings of the cover, which is furnished painted with primer coat and permits repainting to match room color schemes.



Torq Electric Announces Line of Oilburner Motors

A LINE OF FRACTIONAL HORSEPOWER MOTORS for oilburners, designed by Torq Electric Corp., Bedford, Ohio, features a snap-acting starting switch, represented as eliminating burnouts and

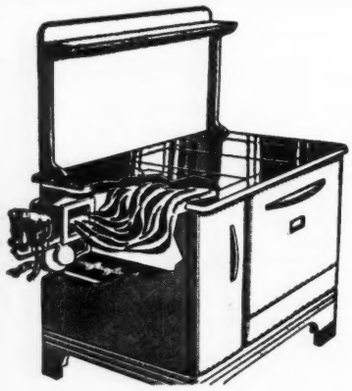
Profits!

Through the

SUPER-THERM

Combination

OIL BURNER



SALES prospects for this modernizing, easily installed oil burner are *all* owners of gas, wood and coal stoves and ranges. Super-Therm fits any size stove, front or rear —will last a lifetime—will not soot or smoke—has automatic safety features. Write now for details and *dealer profit* facts.

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DIRECT DRIVE FOR
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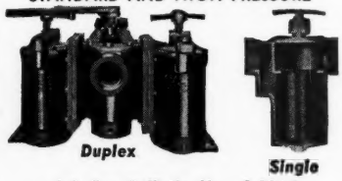
SINGLE AND DUPLEX
QUICK CLEANING
STANDARD AND HIGH PRESSURE



Duplex *Single*

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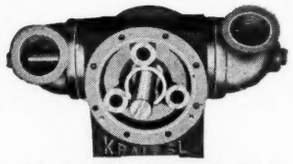
INTERCHANGEABLE SERVICE
BOTH LIGHT AND HEAVY OILS
TANK TRUCK AND BULK SATION



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HACKENSACK, N. J.

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BANKHEAT BURNER
A favorite replacement and conversion unit.

High efficiency "replacement" burners that really save oil.

JOHNSON *Pressure-Type, Automatic*

BANKHEAT BURNERS

Bankheat Burners are ideal for replacement installations. Few burners can match their proven record of economical operation or fuel-saving efficiency.

Bankheat Burners have everything that a home owner wants; dependability that has been time-tested in thousands and thousands of installations; quiet operation; carefree automatic controls; fine workmanship and engineered precision. All this . . . plus their outstanding ability to save oil.

Now is the time to go after replacement sales while oil saving is uppermost in so many minds. Bankheat Burners will make it easier to land these replacement jobs. Let us show you how many advantages they offer . . . and how their easy installation cuts down labor costs and increases your profit. A letter or 'phone call will bring you detailed information.

There's an automatic **JOHNSON BURNER** *for every heating need . . . large or small . . . domestic, industrial or commercial. If you want high efficiency and enduring fuel economy install Johnson Burners.*

Johnson Oil Burners

Builders of fine Oil Burner Equipment since 1903

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IT'S NEW! IT'S COMPLETE!

DWYER TRANSPARENT COMBUSTION TEST SET

Correctly Helps You . . .

- **Determine proper CO_2 content**
- **Check for air leaks**
- **Adjust air controls**
- **Know draft conditions**
- **Level burners and controls**
- **Find stack temperature readings**

The new DWYER Combustion Test Set helps you lick the continuing fuel shortage. Every instrument necessary to do the job included . . . CO_2 Indicator, Visi-Draft Gage & Level, and Stack Thermometer. Furnished with durable carrying case, all accessories and instructions $33.50

Bulletin 220 describes this set as well as other styles and components. Write for it!

F. W. Dwyer Mfg. Co.

315 South Western Avenue, Chicago 12, Ill.

AUTOMATIC SAFETY SHUT-OFF VALVE
for
COMMERCIAL AND INDUSTRIAL APPLICATIONS

General Controls

TYPE V-110 MANUAL RESET VALVES

Controls air, gas, oil, steam or water. They are unaffected by dirty, viscous or high temperature fluids. Highly desirable where attention of attendant is required before resuming service. V-110 is equipped with *trip-free* mechanism; if the safe electric limit control condition does not exist, it can neither be opened nor held open, once the valve has automatically closed it must be reopened *manually*. Usable in any temperature, pressure or flow control circuit or as a flame safety control.

TWO-WIRE • CURRENT FAILURE • EXTERNAL OPERATOR • ADJUSTABLE • MAXIMUM FLOW

Available in ½" to 6" I.P.S.

For complete specifications request literature. 51-4

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801 ALLEN AVENUE GLENDALE 1, CALIF.
Manufacturers of Automatic Pressure, Temperature & Flow Controls

FACTORY BRANCHES: BIRMINGHAM (3) • BOSTON (16) • CHICAGO (5) • DALLAS (2) DENVER (10) • DETROIT (8) • CLEVELAND (15) • HOUSTON (2) • KANSAS CITY (2) NEW YORK (17) • PHILADELPHIA (40) • PITTSBURGH (22) • SAN FRANCISCO (7) • SEATTLE (1)
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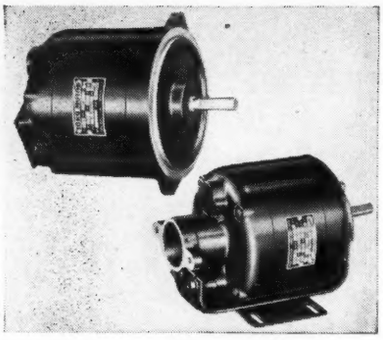
fueloil & oil heat



switch failures. Syncrosnap switches consist of a disc, with integral fingers, stamped as a single piece from special spring metal. All action occurs within the switch, which is pre-set to act at maximum torque speed. Factory tests are reported of motors equipped with the switch and exhibiting no failures in more than two million starts.

The motors are split phase, standard 1/6 and ¼ hp ratings, furnished in two standard flange mountings, with variations of mountings, shaft lengths, diameters and other features available to specification. Rotors are of welded, copper bar construction, frames of steel with die-cast aluminum end bells. A cast-in terminal box provides for ease of wiring and sleeve bearings are equipped with large oil reservoirs.

Esso Standard Adapts Wartime Thickened Fuel

A FUEL IGNITER, made of thickened Diesel oil, originally developed during the war, has been adapted by Esso Standard Oil Co., New York 19, N. Y., to fire stoker-fed industrial boilers to full operating steam pressure in 30 minutes. It employs aluminum soap as a thickening agent, and has a semi-fluid, jelly-like consistency which clings to the coal, burns slowly with sufficient intensity to fire the coal. A paper torch may be used to ignite the product, which can be applied in nests along the boiler grate in advance of use.

Model H Unit Heater Redesigned by Trane

MODEL H unit heater has been completely redesigned by Trane Co., LaCrosse, Wisc., to succeed the company's current model. The casing of the new unit is in only three parts, with top, bottom and sides of one-piece construction. All non-functional parts have been eliminated and production cost difference put into heavier materials and stronger construction. The casing can be dissembled quickly for inspection and cleaning.

An aerodynamically correct fan shroud and Free-Flo louvers complete the casing assembly. The heater's coil is protected against rapid temperature change expansion and contraction by development of a floating coil feature. The coil also is non-freeze and the entire heater has been bonderized. Available in twenty-four sizes, capacities range from 20,000 to 352,000 Btu.

Two New Ko-Z-Aire Furnace Units Announced

TWO NEW SERIES "80" oilfired furnace-burner units are in production at the main Ko-Z-Aire, Inc., plant at Red Oak, Iowa. The additional units, as well as the rest of the line, are handled by Jones & Brown, Inc., Pittsburgh, Pa., national distributors. Available in both conventional and Hiboy design, units are rated at 85,400 Btu/hr. output for the conventional type, 82,000 for the Hiboy.

Both units are oilfired and delivered

SELL Radiant OIL BURNERS

PROFIT
100,000 highly satisfactory installations *plus* constantly increasing contractor demand mean *more sales for you.*

QUALITY
Highest commercial standard underwriters' and F.H.A. specifications. All parts meet rigid inspection and exacting factory tests.

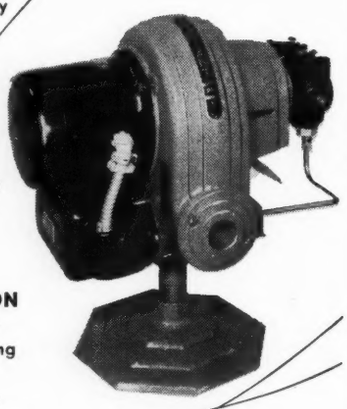
ECONOMY
Burns catalytic oils *completely.*

RANGE OF INSTALLATION
¾ gal. to 20 gal. capacity.

Build your automatic heating business on a sound basis!

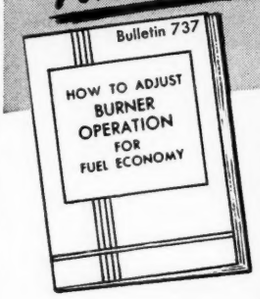
Write *today* for full details on this outstanding, profitable oil burner.

NOTE: Several territories available



RADIANT UTILITIES CORP.
Brooklyn 14, N. Y.

Fuel-Saving SERVICE Simplified



Fuel economy and heating comfort depend on proper fire size more than on any other single factor. Correct adjustment of burner on-and-off cycling and gph-rate can be made quickly and dependably by an amazingly simple test which requires only the recorder shown below and takes less than 20 minutes of a service man's time.

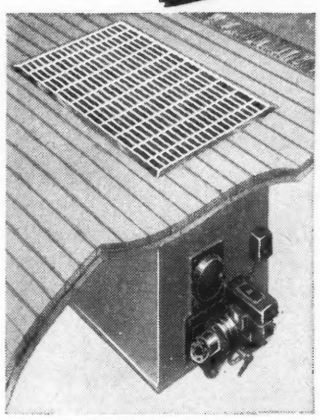
FREE FACTS

The simple procedure of the heat test for adjusting burner operation for minimum fuel consumption and maximum heating comfort is clearly and completely described in the bulletin above. The bulletin also explains how this heat test dramatically demonstrates the need for replacement of an obsolete installation thus opening the way for profitable replacement business. Write for your free copy today.

MEMBER OHI OIL-HEAT INSTITUTE OF AMERICA

BACHARACH Industrial Instrument Company
7000 Bennett Street - Pittsburgh 8, Pa.

Kresky *Superiority* Can Be Demonstrated



The Kresky Evenheat Floor Furnace

Only Kresky Dealers can give 3-Dimension Demonstrations. To many of your customers, terms as BTU output, thermal efficiency, and other phrases are a jargon that goes over their heads. But everyone understands and appreciates the superiority of the Kresky burner because of the unique Kresky 3-dimension demonstration method which lets your customers *HEAR, SEE* and *FEEL* the advantages of the Kresky patented burner. The result . . . more sales per given number of prospects, faster sales, more profitable sales.

THE KRESKY DEMONSTRATION makes everyone star salesmen. For sure sales results . . . for more sales with less sales cost . . . sell Kresky by 3-dimension demonstration. A letter or postcard will bring you full information on the advantages of this positive, results-producing, selling method.

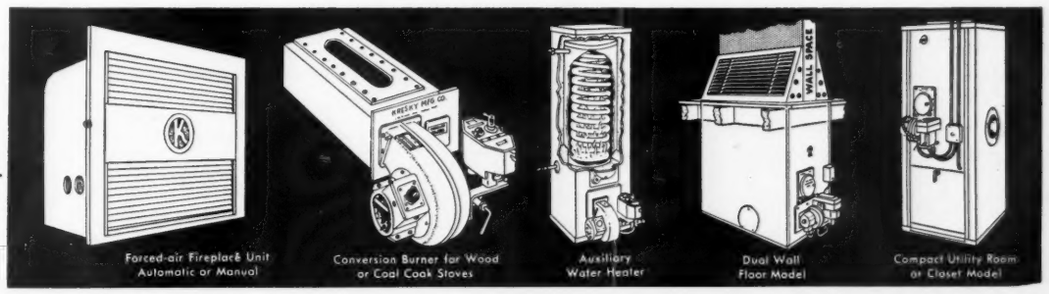
KRESKY MFG. CO., INC.

100 H STREET

PETALUMA, CALIFORNIA

Kresky OIL BURNERS

Listed by Underwriters Laboratories, Inc.


Forced-air Fireplace Unit Automatic or Manual
Conversion Burner for Wood or Coal Cook Stoves
Auxiliary Water Heater
Dual Wall Floor Model
Compact Utility Room or Closet Model

STAINLESS STEEL *Solenoid Valves* ★

★ Standard pressure range, 5 to 250 psi
★ Dimensions 2¾" high x 1⅝" dia.
★ Impregnated coils withstand moisture and condensation
★ Soft insert seats prevent leakage
★ Spring loaded for positive action
★ Stainless steel parts highly resistant to corrosion and wear
★ Power consumption 10 watts max.
★ Pipe connections to specification
★ Also many special valves for handling pressures from 5 to 850 psi

THREE WAY - TWO POSITION
TWO WAY - NORMALLY CLOSED
TWO WAY - NORMALLY OPEN

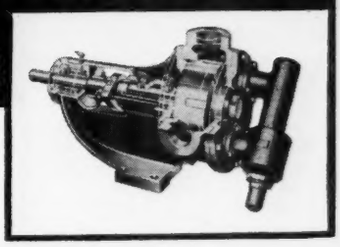
Skinner Stainless Steel Solenoid Valves are rugged, accurate, compact and long lived. They are worthy additions to any product you may have which requires control or metering of fluid and gaseous media. Skinner will be pleased to make recommendations on your particular design applications — they have for hundreds of others. Write today for details and catalog.

Skinner ELECTRIC VALVE DIV.
THE SKINNER CHUCK COMPANY
137 Belden Ave., Norwalk, Conn.

SKINNER ELECTRIC VALVES

VIKING...

The Rotary Pump Built to Create and Retain YOUR CONFIDENCE



The building of a piece of equipment to win your confidence is the aim and purpose of every Viking that leaves the factory.

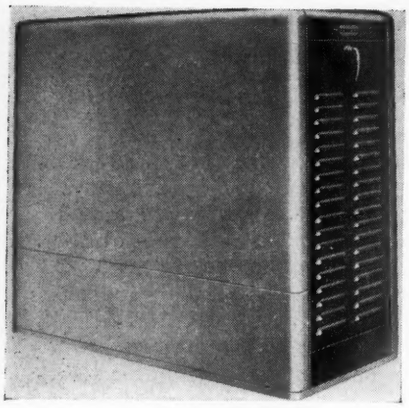
Confidence can only be WON and RETAINED with a pump that will actually go out and do the job it is sold to do.

Look to Viking for the pump that builds confidence. A self-priming, simply and ruggedly constructed pump suitable for delivery against discharge pressures.

Write today for free bulletin 1500EE. It will be sent immediately.

See Our Catalog In SWEETS

Viking PUMP COMPANY
Cedar Falls, Iowa



complete with Minneapolis-Honeywell controls, assembled, wired and ready for installation. Ko-Z-Aire's new model CA gun type burner can be furnished for firing the units, which are additions to a line which now covers a full range from 65,000 to 350,000 Btu in automatically fired gas or oil warm air heating units.

Residence Heating Calculator Available From Stokol Stoker

A RESIDENCE heating calculator, eliminating the use of reference and conversion tables to size and lay-out heating systems is available to dealers and heating engineers from Stokol Stoker Co., Inc., Indianapolis, Ind.

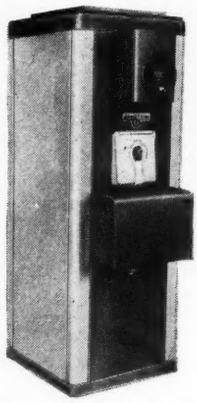
The small calculator can be used for figuring heat losses of residences, sizing round or rectangular ducts or warm air trunk lines, and for sizing automatically fired equipment. Primarily designed for forced warm air systems, it is useful also on gravity warm air and wet heat applications. Complete illustrated instructions are furnished with each calculator, which can be used, in addition, to estimate approximate fuel consumption for heating or hot water requirements.

Bethlehem Foundry Making Anthratube Coal Unit

PRODUCTION has been started by Bethlehem Foundry & Machine Co., Bethlehem, Pa., on Anthratube anthracite coal-burning units. The Bethlehem unit includes the basic features of the equipment designed by Anthracite Institute. In addition, it incorporates a jacket for all models and is delivered assembled with complete wiring of controls. The only electrical work necessary for installation is connection to the household electrical system.

Armstrong Announces Oilburning Hi-Boy

A FULLY AUTOMATIC oilburning winter conditioner of the "high-boy" type is in production at Armstrong Furnace Co., Columbus, O. The compact unit requires less than a square yard of floor space for installation and delivers 72,000 Btu/hr. at the bonnet, 61,200 at the register. A vaporizing type burner, with stainless steel combustion chamber, is employed, with automatic humidification, thermostatic control, forced air circulation and air filtering provided as standard equipment. The cabinet is of standard Armstrong two-tone blue baked enamel.



The unit was designed, reports the company, not to change the shape or size of the element itself, but to reduce to a minimum the waste of space between

8

Why Stay Behind the 8-Ball With Old Fashioned Oil Heat?

Sell Fuel Saving PENN Packaged Heat

Give yourself a chance at sales with *fuel-saving* PENN *Packaged Heat.* No long-winded explanations are needed to sell it. Customers can *see* the *difference.*

PACKAGED HEAT

PENN BOILER & BURNER MFG. CORP.
Lancaster, Pa.

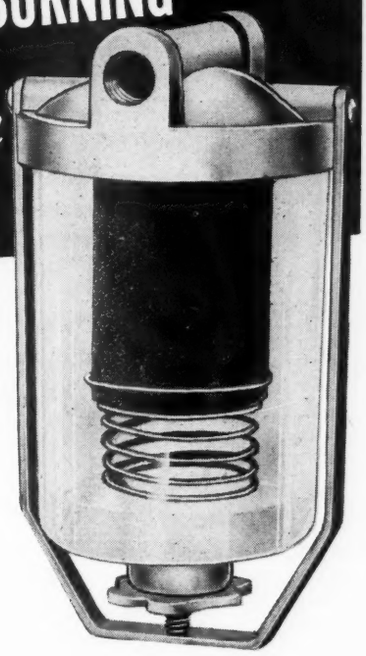
IT HAS WHAT YOU NEED IN A THERMOSTAT

It maintains a home in ideal comfort at any desired temperature.
It operates on a variation of ½° above or below the point set.
It is a corrosion-proof mercury switch contact equipped control.
It performs perfectly for years without any servicing attention.
It is a masterpiece in mechanical precision, design and appearance.

Complete catalog sent upon request

MERCOID APPROVED CONTROLS
FOR HEATING, AIR CONDITIONING, AND INDUSTRIAL APPLICATIONS
THE MERCOID CORPORATION • 4201 BELMONT • CHICAGO 41 • ILL.

KEEP 'EM BURNING
with
Klemm
FUEL OIL
FILTERS



Klemm
AUTOMOTIVE PRODUCTS COMPANY
1718 N. DAMEN AVE. CHICAGO 47, ILLINOIS

INCREASE HOT WATER TANK CAPACITIES from 13 to 56%
with THE New BABBIN
Thermostatic Mixing Valve
3/4" — 2"

This BABBIN Valve brings fully dependable thermostatic hot water regulation to the small and large home field. It is adaptable for use on storage tanks, submerged tanks and tank saver units, and many other industrial and domestic applications.

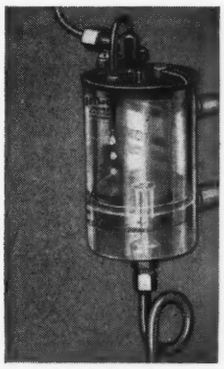
- All Bronze Casting . . . "ADNIC" Corrosion-Resistant Thermostatic Unit
- Positive Hot and Cold Water Shut-off
- Temperature Range from 70° to 180° F. Only one moving part.

EXPANDING TYPE
SOLID LIQUID FILLED
PATENTS
2081726 2282152

For complete details. Write today.
DEPT. F

Babbin N.Y.C. THERMOSTATIC CONTROLS
258-60 Canal St. New York

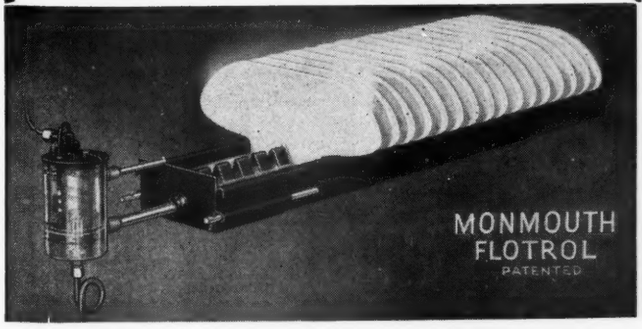
MONMOUTH
HUMIDIFIERS



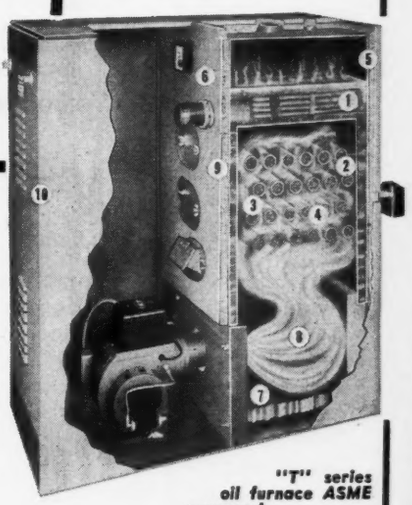
- For healthful heating, use a good humidifier on every heating installation you make. For long dependable performance, and freedom from repairs and adjustments, make it a Monmouth FLOTROL, or a MICRO-FEED, the best engineered and built humidifiers available. Get that easy EXTRA profit in every Monmouth sale. We also make gas operated HUMIDITY CONDITIONERS for all radiator jobs.

Bulletin and prices on request.

THE CLEVELAND HUMIDIFIER CO.
7808 Wade Park Ave., Cleveland 3, Ohio



√ DEALERS
Who Check-up
SIGN-UP



One reason is the easily installed, and serviced oil fired steel boiler . . . that really satisfies customers . . . profitable and easy to handle for dealers. Reduces fuel costs up to 1/3. Sizes: 720-1610 Sq. Ft. radiation (hot water); 480-1020 Sq. Ft. radiation (steam).

Valuable dealer franchises now open . . . Find out why so many dealers who check up . . . then sign up.

"T" series
oil furnace ASME
approved

GENERAL
Automatic
EST. 1924
Checks first . . . with the finest.

BOILER AND FURNACE MANUFACTURERS — ATTENTION!
Special model oil burners available for installation in your own units. From .75 to 2½ gal. with CO_2 readings 13% to 14%.

Write for details.

GENERAL OIL BURNER CORPORATION, 2300 Sinclair Lane
Baltimore 13, Md.

elements of the unit. The resultant compact assembly retains the individual efficiency of each part and improves operation of the unit as a whole.

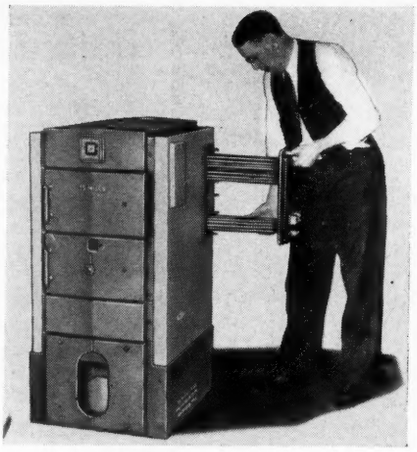
Houghto-Solv Announced As Fueloil Sludge Solvent

HOUGHTO-SOLV, a product of E. F. Houghton & Co., Philadelphia 33, Pa., has been announced as a speedy, effective additive to dissolve sludge from fueloil systems. Recommended application for relatively clean systems is one pint of solvent per 1000 gallons; one quart for the average system. Where severe sludge conditions exist an initial application of two or three quarts may be necessary, with amounts of subsequent treatments reduced.

The solvent properties of Houghto-Solv put in permanent solution the sludge in the storage tank and permit the fine particle dispersion to be burned.

Smith-Mills 150 and 1500 Boilers For Oilburning

H. B. SMITH CO., Westfield, Mass., has introduced two new series in its Smith-Mills residential boiler line. The #1500

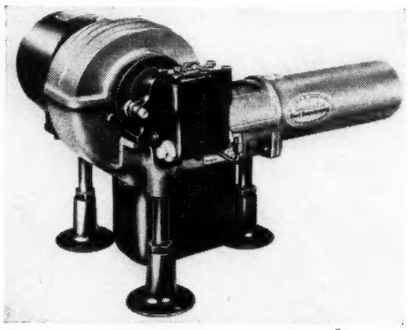


boiler is furnished jacketed and complete with a tankless heater, built-in the back section; the #150 boiler has provision for a built-in domestic hot water heater for use with a storage tank. Both series are designed especially for oilburning and with multiple flue gas travel over vertical water tubes, then laterally into upper flue channels through which they are drawn to the front of the boiler. From there, flue gases return the entire length of the boiler through lower side flues and finally into the chimney.

Five models in the #150 series have net I-B-R ratings ranging from 275 to 575 sq. ft. steam, 440 to 920 sq. ft. hot water radiation. The #1500 series consists of four sizes, ranging from 350 to 575 sq. ft. steam, 560 to 920 sq. ft. hot water radiation. The cast-iron, sectional boilers in both series are hydrostatically tested, with maximum allowable working pressures determined to be 15 lbs. steam, 40 lbs. water.

Silent Glow Model 600 Aimed At Small Homes Field

MODEL 600 AIR-SEEL gun type oilburner, announced as a low priced unit by Silent Glow Oil Burner Corp., Hartford, Conn., is described as a quality burner,



E-Z MORE PROFIT PER Service Call

When the oil burner Servicemen answer a call it is easy many times to add furnace cleaning to the job. E-Z Fuel Oil Soot Destroyer (for fuel oil soot only) does a thorough, clean, safe job in just one application. Takes but a few minutes. Keep a 5 lb. Can on each service truck, always. Stock the 1 lb. Cans for sales to your customers. If your Distributor cannot supply you, order direct.

No. 1 Pkg. approx. 1 lb. . . . . List $1.00 ea.
No. 5 Pkg. approx. 5 lbs. . . . List $4.50 ea.
Liberal discount to bona fide Servicemen.

Special discount to Distributors on quantity purchases, allows for extending regular discount to Dealers and Servicemen.

HEALY-RUFF COMPANY
797 Hampden Avenue St. Paul 4, Minnesota

Smoke means wasted energy!

SENTRY DRAFT CONTROLS REDUCE HEAT LOSS . . .

- Sensitive operating action
- Completely automatic operation
- Non-corrosive brass bearings
- Easy to install . . . quickly!
- Factory adjusted for accuracy
- Durable, rugged construction
- Full range of sizes from 6" to 12"
- Fully warranted and guaranteed
- No servicing necessary
- Underwriters' listed

Made by the manufacturers of SENTRY AT-A-GLANCE tank gauges. Write for descriptive literature.

KRUEGER Sentry PRODUCTS
GREEN BAY • WISCONSIN

STEP UP your circulation with AUTO-VENT Air Eliminators

Simple as A-B-C . . . yet positive in action every time! Sure-cure for air pockets and air traps that hold up the free circulation of water or other liquids flowing through pipes —pressures to 75 lbs. Simple in construction—easy to install!

Built of brass with self closing float operated valve. Withstands high temperatures, oil and other adverse conditions. **Try these No. 7 Auto-Vents once, and you'll use them on every job. They're that good, yet NOT expensive.**

★ ★ ★

IT WILL PAY for you to have information and prices on the complete Maid-O'-Mist line which includes other types of air eliminators, and heating specialties. Write us today, or see your jobber!

HERE'S HOW TO VENT!

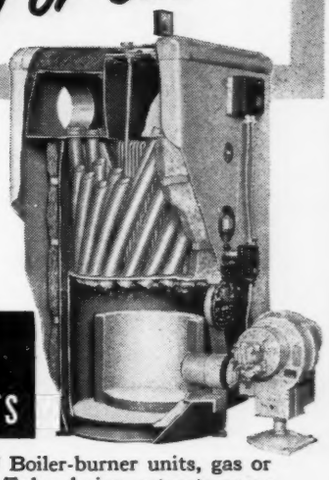
- Hot Water Heating Lines
- Hot Water— Convectors Unit Heaters Baseboards
- Cold Water Lines
- Coils, Tanks, Etc.

MAID-O'-MIST INC.

AUTOMATIC HUMIDIFIERS FOR ALL TYPES OF HEATING SYSTEMS

3221 N. PULASKI RD.
CHICAGO 41, ILLINOIS

Finer Performance with Oil or Gas



ASME CONSTRUCTION

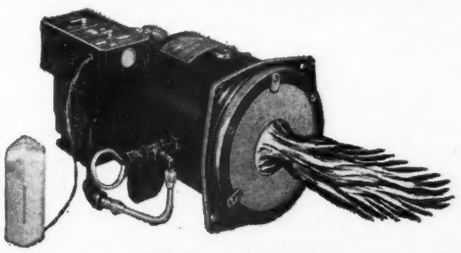
EXCLUSIVE SPIRAL TUBES

Mt Hawley BOILER-BURNER UNITS

104,000 to 1,043,000 BTU Boiler-burner units, gas or oil-fired. Exclusive Spiral Tube design extracts more heat, reduces stack temperature by 100°. 7 sizes—3 domestic; 4 commercial. Shipped assembled, just remove crate. Easy to install. All sizes available galvanized for water heating. Write for literature.

MT. HAWLEY MFG. COMPANY
3, Mt. Hawley Airport, Peoria, Illinois
Manufacturers of a complete line of conversion oil burners— 0.65 to 20 G.P.H.

The Boston Breese Burner



Ideal for SMALL HOME HEATING

Automatic or Manual Models

The BOSTON BREESE BURNER is available in 2 sizes —2/3 gph and 1 gph for 4 to 6 room houses. The oil pilot flame burns when thermostat is not calling for heat, thus preventing cold air in ducts. It prevents over-firing by supplying the exact amount of heat the furnace can absorb, thus cutting heating costs. Low electrical and installation costs. No mechanical parts of the burner are *inside* the furnace, thus *eliminating burned out equipment, reducing service problems to a minimum.* (Dealerships open.)

IDEALLY SUITED FOR WARM AIR FURNACES, SPACE HEATERS, BOILERS, SMALL RESTAURANTS & LARGE KITCHEN RANGES.

WRITE FOR COMPLETE INFORMATION

BOSTON MACHINE WORKS COMPANY

Oil Heating Supplies Division, 7-17 Willow St., Lynn, Mass.

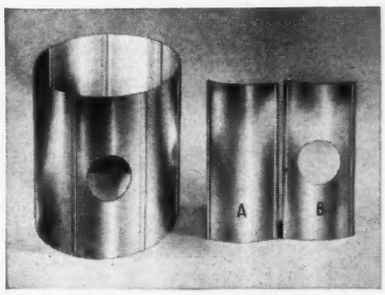
Want to make "a DOLLAR A MINUTE?"

You can do it installing the new

HEAT-RESISTANT STAINLESS STEEL

PANELOX (Trade Mark Reg.)

COMBUSTION CHAMBER FOR OIL BURNERS



- **Installed in Minutes**
- **Heats up in Seconds**
- **Stands up for years**
- **Saves up to 25% Fuel Oil**

Patent applied for

Reduces noise, smoke, soot and oily film. Provides more even heat. Prevents override. Requires no backfill. No cementing. No tools. Panels slide together easily. Light weight. Easy to handle. No breakage. Live dealers are really cashing in with PANELOX. Sold by leading Wholesalers.

Write, wire or phone for full details . . . Now!

STEFCO STEEL COMPANY • Dept. F. O.

Heating Equipment Division • Michigan City, Indiana

Machine Made — They FIT!

Prefabricated in Long-Lasting Aluminum

"S" and Drive Clips Furnished

CHAR-GALE

ALUMINUM FITTINGS

CHAR-GALE MFG. CO.

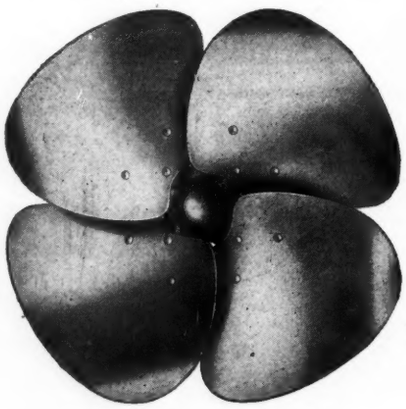
Minneapolis
Omaha

adapted to the smaller home field. The model 600 embodies many of the exclusive features incorporated in the company's 800 and 1300 Air-Seel's, including the Air-Seel fan that conserves the heat it makes. A one piece time-saver top, chrome steel ignition rods and progressive rotation also are part of the new model's operating features. The burner, made in strict accordance with Commercial Standard CS75-39, is warranted to burn 100% catalytic-cracked oil when fired at its prescribed gallonage from .75 to 1.35 gph.

A program of supporting helps to assist dealers in selling the burner already has been formulated. The 600 Air-Seel will be featured in advertising campaigns on radio, metropolitan newspapers and national magazines. The national advertising will be supplemented with direct mail assistance, emphasizing the burner's adaptability.

Torrington HI-Eff Fans Of 3 or 4-Blade Construction

A NEW LINE of HI-Eff fan blades, which Torrington Mfg. Co., Torrington, Conn., expects to have in quantity pro-



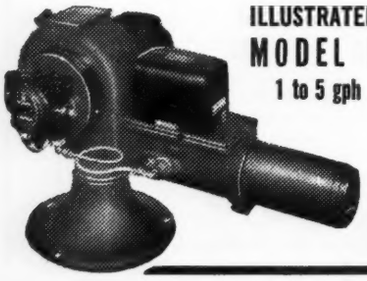
duction by December 1, is the result of two years of research and development. Even though the blades appear to be larger, they require no greater space or other changes for operation and may be readily adapted for all existing uses of fan blades. Suggested uses are in space heaters, desk fans, unit heaters and similar applications.

Presently available in three- or four-blade construction, models in the line range in diameters from 10" through 20" and 8" through 20", respectively. There are five pitches in most diameters. Blades are aluminum, spider and hub are constructed of steel. An eight-page catalog available, lists specifications and performance tables.

Marsh Circulating Pump Mounts In Two Positions

A CIRCULATING PUMP that can be mounted in either horizontal or vertical position is available from Marsh Heating Equipment Div., Jas. P. Marsh Corp., Skokie, Ill. Mounting changes

One of the OLDEST BURNERS ...one of the FINEST!



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MODEL L
1 to 5 gph

U. S. oil burners offer much more in performance and fuel economy—for much less in proportionate cost.
One of the oldest manufacturers of oil burners, if not *the* oldest, U. S. has kept abreast or ahead of the times in burner design and mechanical engineering.
3 models are available, 1 to 5 gph, 4 to 8 gph and 7 to 16 gph . . . a range to cover almost any heating specification.

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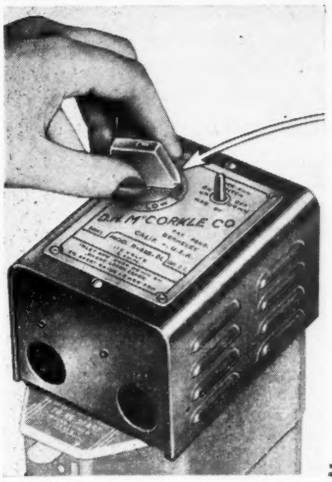
McCORKLE R-458 FOR ALL FORCED DRAFT VAPORIZING BURNERS



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- A MUCH NEEDED IMPROVEMENT FOR RANGE BURNERS
- SAVES OIL — REDUCES CARBON — REDUCES NOISE
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- AIR VOLUME ADJUSTABLE TO DRAFT CONDITIONS
- FOR ALL NEW & OLD FORCED DRAFT INSTALLATIONS

WRITE FOR INFORMATION

D. H. McCORKLE CO. BERKELEY, CALIF. BOX E STATION A

are accomplished by manipulation of four bolts to change pump to desired position. A special rubber coupling, with brass inserts, secured to the motor and pump shafts, is designed to elimi-

nate transmission of vibration. The pump shaft rotates in an oilite bearing, fed through an oil cup in the housing.

A Jack & Heintz continuous-duty, 1/6 hp motor is standard. It is a single phase, 60 cycle, 110 volt unit, supported by rubber mounts and secured to a steel support to maintain proper alignment. Pumps are available with either 1¼" or 1½" pipe.

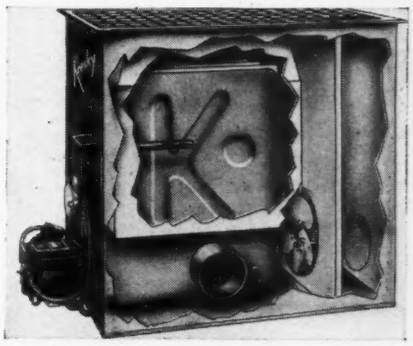
Vis-A-Test Gauge Samples Tank's Contents

A PLASTIC GAUGE, available from Vis-A-Test Gauge, Seattle 8, Wash., is designed to be affixed to the bottom of a dip stick. It is equipped with a valve, which is cocked by hand and automatically closed when the gauge hits the bottom of the tank. A sample of the tank's contents is taken through the open valve and deposited in the clear plastic tube, which comprises the body of the gauge. Upon withdrawal, liquid level is indicated on the dip stick, while the sample can be examined readily for sludge, scale or sediment.

The plastic portion of the gauge is calibrated in inches and indicates liquid depth up to 12".

Kresky Evenheat Furnaces In Floor and Wall Type Models

A NEWLY DESIGNED oilburning floor furnace, designated model EVF by Kresky



Mfg. Co., Petaluma, Calif., embodies all the features of the older model, and incorporates new refinements. One of its chief advantages is its compactness, measuring 20" x 36", and requiring only 36" of subfloor space. Model EVD is furnished with dual wall registers.

With a rated output of 72,850 Btu/hr., the furnaces incorporate two blowers, one to supply combustion air, the other, a circulating fan suspended in rubber, for forced distribution of heated air. Cold air returns may be installed,

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Get TASGON, the magic rust solvent that loosens frozen joints and nuts almost as fast as you can pull a rabbit from a hat! Loosens rusted couplings, bolts, unions . . . penetrates right to the heart of the trouble. Dissolves grease, oil, tar, paint, sludge . . . cleans, then lubricates contact surfaces and tools. Save your equipment, save your temper, write today for FREE sample of TASGON, and complete details.
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Satisfaction and fullest
Confidence toward our
HARSCH *Nozzles!*

H. HARSCH & CO., INC., 230 TUSCAN ROAD, MAPLEWOOD, N. J.

if desired. Complete automatic operation is accomplished with thermostatic controls and a variable speed burner control which maintains proper blower speeds for the amount of fuel consumed. Heating elements are constructed of 14 and 16 gauge steel, with electrically welded seams. Both models are fired with Kresky air induction burners.

Nozzle Service Kit By Boston Machine

BOSMACO-APTHORP nozzle kits, available from Boston Machine Co., Lynn, Mass., are furnished in attractive metal boxes, measuring 11½" long, 6" wide and 4⅜" deep. They contain cadmium plated steel nozzle trays that are removable, leaving the bottom of the box for service tools. The tray holds forty-two plastic nozzle vials, four adapters, pressure gage and bushing, a nylon nozzle brush, cleaning stick container and a plastic box with top for miscellaneous nozzle parts.

The kits are suitable for any standard nozzle and are offered either with or without the nozzle vials and caps, or supplied equipped with an assortment of nozzles, strainers and adapters.

◈

Morris Spiegel is functioning as sales manager, Hot Wave Heating Corp., Bronx 57, N. Y., in charge of retailing a complete line of nationally known makes of domestic, commercial and industrial oil and gas burners. Mr. Spiegel, with twenty-five years' experience in the heating trade, is well known in the metropolitan New York area for his sales activities.

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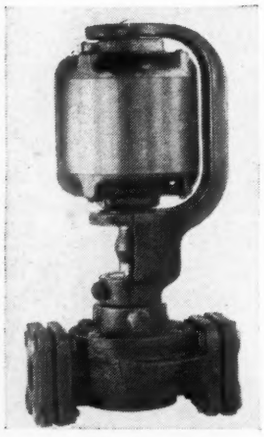

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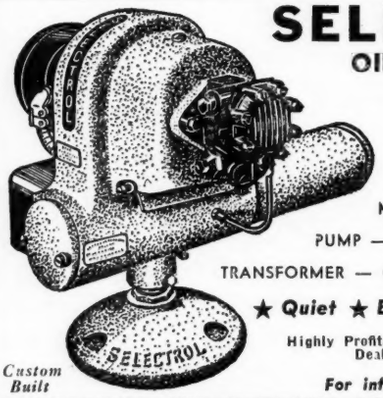

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3 CONTROLS — Minneapolis-Honeywell
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★ ***Quiet*** ★ ***Efficient*** ★ ***Dependable***

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THE GORTON SYSTEM of VAPORIZING and EQUALIZING existing steam heating systems for automatic heating provides automatic heat distribution . . . The flow of vapor to all radiators is automatically controlled so that rooms farthest from the boiler are heated as quickly as those near the boiler . . . NO PIPING CHANGES ARE REQUIRED.

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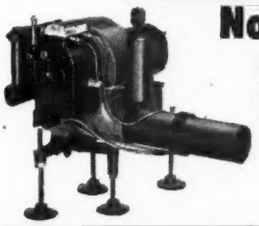

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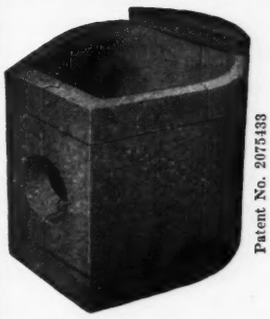

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1—HEAT UP IN LESS THAN ONE MINUTE.
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Write for literature listing other selling and installation advantages.

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It's easy to get a lion's share of furnace cleaning profits when you use a Grand Rapids Furnace Cleaner. Greater cleaning capacity, handling ease and practically designed groups of furnace cleaning attachments help you give better service and clean more furnaces per day at a higher profit.

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DELAVAN ENGINEERING *Manufacture*

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THAT ECLIPSES THEM ALL . . .

Every Balloffet design oil burner nozzle marked BALLOFFET BY DELAVAN is manufactured exclusively by DELAVAN ENGINEERING COMPANY, under Balloffet license. The well-known Balloffet design combined with the specialized engineering skill of DELAVAN manufacture make these nozzles unexcelled for precision construction. Built to "DELAVAN STANDARDS" symbolizes their high operating efficiency . . . dependable performance and long life.

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REPLACEMENT SALES
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Sun Heated House Gets Test This Winter

SUN HEAT, stored chemically against a cloudy day, will be used to heat an experimental home near Boston this winter. The development is the work of Dr. Maria Telkes, woman scientist of the Massachusetts Institute of Technology, who will occupy the house in Dover, Mass., during the coming winter.

Solar heat is trapped in an 800 square foot, black lined metal box built into the roof of the five-room, one-story house. The box is covered by two plate glass sheets to trap the heat, which is stored in a chemical heat storage container. Dr. Telkes describes the substance as a cheap chemical known as sodium sulfate dekahydrate. This sodium compound melts as heat is applied to it, and gives up the heat as it solidifies. It is designed to store heat on sunny days that can be released as needed on cloudy days. A temperature of about 90 degrees will be maintained in the container, and calculations have been made at the nearby Blue Hill Observatory to size the plant so that average solar radiation during the winter will be sufficient to keep the house comfortable.

The small, one-story house has been completed and is ready for occupancy. Though relatively small in size, the house cost $20,000, of which $3,000 went for the solar heating system. Against this expense Dr. Telkes calculates there will be a saving of $150 a year in fuel for heating, and the system should be entirely free of maintenance. The chemical should last indefinitely and presumably never will have to be replaced.

◈

John E. Henry, Albany, N. Y., died on September 11 of a heart attack, suffered while on a fishing trip to Nova Scotia. One of the founders and a former president of the Albany O.H.I. Chapter, Mr. Henry was stricken just after hooking a 60 lb. tuna. He was with George Gates, his partner in the Capitol City Automatic Heating Corp., in a fishing launch in the waters off Nova Scotia, when the attack occurred. He had been ill for several months, but before leaving on the fishing trip, had been back on the job. Mr. Henry, who was 55 years of age, is survived by his wife, a son and a daughter.

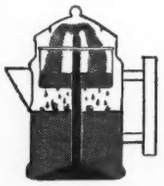
Louis E. Marron, chairman of the board, Coastal Oil Co., Newark, N. J., helped the United States team amass a total of 4,530 points to capture the 5th International Tuna Cup Match, held at Wedgeport, Nova Scotia, September 8-10. Mr. Marron made three catches during the tournament, including a 609 lb. tuna, hooked less than two minutes after the competition opened. During the hour and twenty-seven minute struggle needed to boat the fish, Mr. Marron was forced to change boats in extremely rough water when his orignal boat lost its rudder.

E. W. Chapman on September 1 joined Tuthill Pump Co., Chicago, as vice president in charge of engineering. Before coming to Tuthill, Mr. Chapman's background included experience in similar capacities with Bowser, Inc., Industrial Pump Div. and the Blackmer Pump Co.

PERCOFLASH
the flash-action BOILER

The amazing operating efficiency of the PERCOFLASH Boiler is found in its unique percolating principle of design. Water is flashed into steam in all heads with exceptional rapidity and efficiency. Geyser tubes raise water to steam heads eliminating the necessity of raising all water in boiler to steaming temperature. This means faster and more economical generation of steam. It's a fuel saver whether coal, gas or oil.

When you think of Percolating action, think of PERCO-FLASH!



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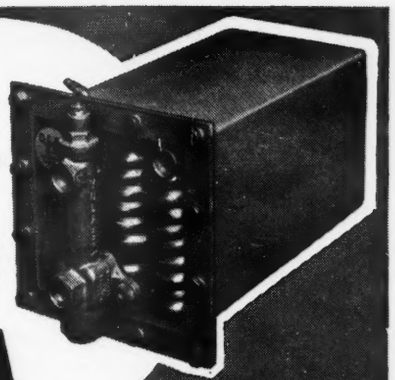
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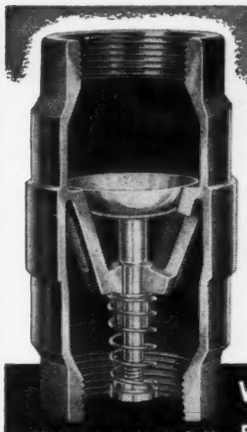
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MONEL METAL POPPET CHECK VALVES
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WHITE MACHINE WORKS
Order from Your Jobber FORT WAYNE 1, INDIANA

Oilheating Trends

(*Continued from page* 11)

that they would have the same amount as last season will either get an improved quota during the Fall or else buy product in the spot market, since the amount of fueloil going to be available is considerably above the supplies indicated by a cross-section of these allocations.

REACTION TO OIL PRICE: Reporting fueloil and oilheating men this month say that just about half of their fueloil customers have complained about the present price of fueloil. When the question was asked another way, however, the reaction seemed a little more favorable. The composite estimate of all reporting dealers is that about 77% of customers, while they objected to the high oil prices, look upon them as part of a general inflation pattern and not necessarily out of line with other things. The remaining 23% of customers believe that fueloil is unreasonably high, and that it has gone up substantially more than average living costs.

EXTRA OIL HANDOUTS: Regardless of what fueloil distributors' quotas may be this season, quite a number of them were given extra oil during the summer, not to be charged against their allocations for the year. In fact, among the distributors reporting from all over the country 34% got a special summer handout in one form or another. Typical of the methods are the following explanations from dealers: "Oil bought in June and July not out of quota" . . . "20% extra" . . . "All we wanted in summer" . . . "Unlimited for September only" . . . "Extra oil above quota for all new burner customers" . . . "Extra oil for all new 1,000 gal. tanks" . . . "One extra load, 4,000 gallons" . . . "Given more oil than tanks can hold" . . . "Extra 10,000 gallons" . . . "About three per cent more" . . . "Extra oil to fill our storage" . . . "50,000 extra in July and August" . . . "Unlimited during summer" . . . "We bought the quota overage from another dealer" . . . "Unlimited quantities during summer, but very little advantage gained as our storage was full."

DEALER COMMENTS: Comments from dealers covered the various questions of the month—these are typical: "Refiners' high profits are believed by many to be the cause for too-high fueloil prices" . . . "We find most developers installing pot-type furnaces because of low labor charges for electricians, fitters, and no service guarantee" . . . "We cannot maintain an adequate installation department because of our limited fueloil allocations" . . . "trade magazines and oil industry say plenty of oil this year, but no local suppliers will yet make any reasonable commitments" . . . "Most present users complain that oil is too high" . . . "We have a waiting list to change to gas when the local utility permits it; most are coal conversions, but quite a number from oil" . . . "Damn the Russians" . . . "Oil suppliers seem more anxious for business; salesmen are coming in, which hasn't happened in two years" . . . "The industry is being hurt by a lot of poor installations by incompetent people; when trouble starts the customers call on regular oilburner men to get them out of their difficulty" . . . "Too many strikes, too much slow down, and not enough sweat over the work to be done" . . . "Customers are tacitly complaining about oil price by the way they pay their bills—slow as heck."

Sundstrand OIL BURNERS

WRITE US FOR COMPLETE INFORMATION
FOR
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• AUTOMATIC HEAT
SUNDSTRAND ENGINEERING CO.
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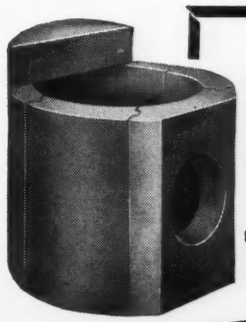
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NU-TROJAN Combustion Chambers
A Product of McLeod & Henry Co., Inc.
Nu-Trojan Chambers have the features that lower installation costs and reduce servicing costs to help you secure profitable jobs. Has few parts, does not need steel bands to hold them in place. First quality "Steel Mixture" Pennsylvania fire clay. Fusing point 3180° F. Write Dept. 61 for details.
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EVERYTHING FOR THE OIL BURNER TRADE

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Fuel For Your Future

(*Continued from page 72*)

oil have achieved full-fledged stakes in our economy. We pay for them. And we pay enough so that the men who handle them make a profit. So . . . for economy's sake we conserve. With no fear of famine, we aim to get the *most* out of the *best* fuel—oil!

Perhaps you are among the 19% of our population with a central heating plant who already enjoy oil heat. Or maybe you are one of the at least 45% who have stated in survey after survey that you plan to change to oil heat as soon as possible. Whether oil heat is a part of your present or your future, two industries are working as a team to make certain that you enjoy clean, healthful, economical, *abundant warmth* with complete assurance of an *abundance* of fuel—today and tomorrow.

Fueloil stocks at the end of August were up *21%* over last year at the same time. The additional demand by new burners this winter cannot possibly exceed *15%*. The nation's oil supply is *abundant* . . . and it's *available!*

What greater evid nce of confidence could the oil industry display than to celebrate its Progress Day at this time of year . . . when heating demands are already being felt in most parts of the nation. Now . . . when the familiar fuel oil truck—the pipeline on wheels—is rolling from Manhattan to Main St.

The oil and oil heat industries are meeting the challenge of your ever-increasing use of petroleum products. To put a new twist to a familiar slogan: "There's fuel oil in your future." Plenty of it!

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* Additional To Burner Price

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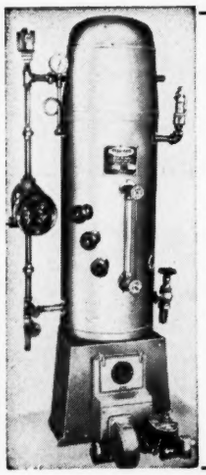

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From one to 100 Horsepower

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Suitable for Tailor Pressing Machines, Laundries, Dry Cleaners, Chemical Plants, Food Processing, and many other applications where high pressure steam is required.

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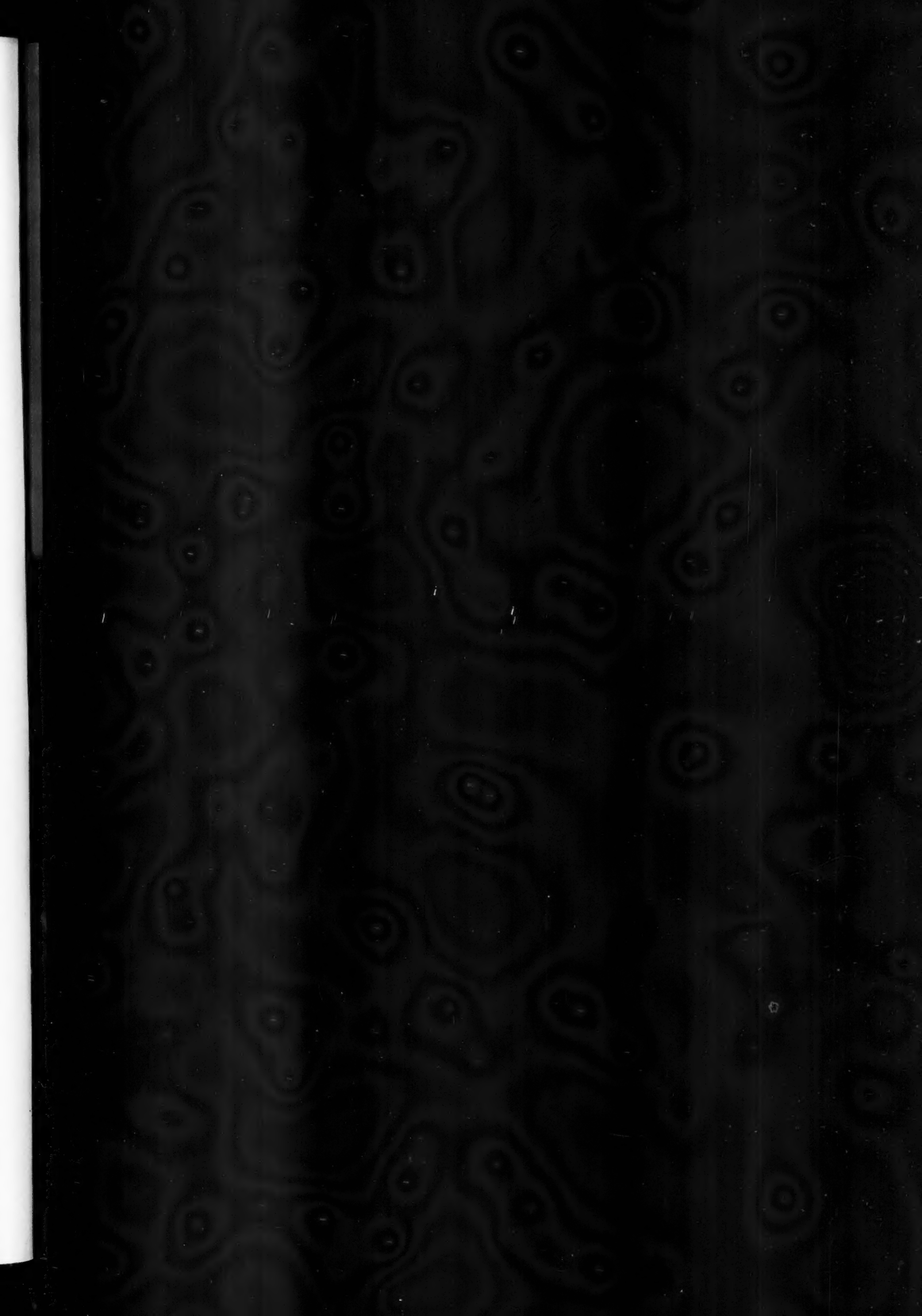
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